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EVOLUTION IN ARCHITECTURE

THE age in which we live is so remarkable for the growth of international co-operation in nearly every sphere of human activity that congresses and meetings have now ceased to attract more than passing attention, and have become an ordinary feature of the inside pages of our daily papers. If, however, one pauses for a moment to consider the significance of this new factor in international relationship it presents certain features of interest, and indicates a new standpoint which, gradually and inevitably, is replacing the pre-war conditions of national consciousness.

The permanent results of such international contact are difficult to estimate, and it is equally hazardous to indulge in any forecast of the future, firstly, because no immediate results are to be observed, and, secondly, because such results are usually given less publicity than the causes from which they proceed. It can, nevertheless, be safely assumed that the tendency is towards a vertical cleavage (to borrow a geological metaphor), as against the most normal horizontal division represented by national peculiarities and characteristics.

The growth of the power of international finance is an illustration of this tendency, which is slowly but surely transforming European prejudices and national characteristics in the spheres of commerce, industry, science, and art. In the latter sphere architects have been particularly active, and our own Royal Institute has, on many occasions, led the world in initiating and organising international congresses to consider matters affecting the development of architecture as an art and as a liberal profession.

In July, 1924, representatives from nearly every civilised country met in London (under the ægis of the R.I.B.A.) to confer on the important subject of architectural education, more especially in view of the considerable modifications in outlook and possibilities which resulted from the war. In spite of the immense difficulties of organisation soon after such a world-wide upheaval, and the further difficulty of confining so complex a subject within practical limits during the space of one week, the organisation of the Congress was so carefully planned by the Executive Committee that much useful work was achieved and important results may be expected in the future.

To quote the words of Professor William Emerson in the volume of proceedings just published*: "Among those architects whose good fortune brought them from distant shores to the International Congress on Architectural Education in London there is one prevalent feeling, that of appreciation for the generous hospitality offered them under the kindly auspices of the Royal Institute of British Architects. Such a concensus of opinion was assured by the nicely balanced ration of work and play provided by our considerate hosts, served by them with so beguiling a sauce of good fellowship as to ensure its appeal to the most critical taste."

Professor Emerson, in a subsequent passage, aptly summarises the results of the Congress when he says: "It seems reasonable to point out that our great achievement lay in the general recognition that our educational problems were essentially similar, that the fundamental principles that we are striving to express are the same, that our differences lie in the individual application. We were all able to agree that we should strive for honesty of expression, whether in relation to materials or conditions; that the past was valuable because of the lessons it taught, not because of its immediate applicability to our modern problems, but in order that our modern architecture might as truly express its civilisation as did the architecture of the past. England, in calling the Congress, has rendered a signal service to us all by helping us to realise that what we thought was our own problem is the problem of all those who are striving for the improvement of architectural eduction."

This volume of proceedings forms more than a summary and epilogue of the Congress; it provides fascinating reading for the man in the street. The contributions include an introduction by Mr. Curtis Green, A.R.A., an able review and summary by Professor Lionel Budden, a reprint of the papers read at the Congress by delegates from France, Italy, America and England on the three aspects of architectural education, past, present, and future; "communicated papers" on the same subject from Austria, Belgium, Denmark, Holland, Hungary, Italy, Norway, Spain, Sweden, Japan and Mexico, and from the British Schools of Architecture in Canada, Australia and South Africa, together with other papers and a large number of carefully selected examples of the work of students in architecture from all parts of the world.

Among these contributions, all of which contain so much of interest, we would make special mention of the literary charm of the essay on "Architectural Education of the Past in France," by M. Paul Léon, *membre de l'Institut, Directeur des Beaux Arts*, and the equally brilliant review of the past, "with special reference to England," by the late Mr. Paul Waterhouse, F.S.A., P-P.R.I.B.A., which deals with many aspects of the subject and includes a brief survey ("The Days of the Giants") of the work of the English masters of the Renaissance followed by a study of the methods of training more recently in force ("The Praise of Our Fathers"). One cannot resist quoting Mr. Waterhouse on this subject. He says:—

". . . I feel sure that the one abiding principle in the training of the architect, whether in a guild of masons or in a monastery, whether in mediæval times or in the days of post-Reformation practice, was contact in a subordinate capacity with some man whose independent status as a designer was already won.

"To call this condition of ripening, pupilage, is to unduly narrow the multifarious forms of the process. It must have been throughout the ages of ever varying character. . . . Sometimes he (the pupil) learnt by precept, oftener by example, and always hemust have profited more by his own mistakes than by the successes of his guide. . . .

"Now since experience (which is success through failure) and head-knowledge (which is a slow process of advance from ignorance) are the necessary elements of architectural equipment, it is obvious that the failures and the ignorance must not be entirely practised at the expense of those who pay for our designs." This seems to put the case for pupilage or apprenticeship with some force, but, in his concluding remarks, the late Mr. Waterhouse shows that the school training is not really a break with the past:—"It seldom happens that a school student finds himself at the end of his course in sole command of an immediate practice. As often as not his career as a graduate in architecture begins or continues in draughtsmanship."

With regard to the present, there is a general fundamental agreement as to the value of tradition and the necessity for specialised school training. France still leads the way in insisting on the competitive elimination of the unfit and the importance of a training in logical thought and construction in addition to exercises in design. Similarly, in the papers on the future, France (although the oldest of the Schools), presents the most modern viewpoint, and rightly stresses the importance of expressing the possibilities of new materials by new interpretations of the eternal laws of beauty and proportion.

*"The First International Congress on Architectural Education." Volume of Proceedings, R.I.B.A., London. 10/6 nett. (Illustrated.)

NOTES.

Waterloo Bridge. We have written so much and so continuously about Waterloo Bridge that we believe there is little more to be said for its preservation beyond what we and the great body of the Press and the learned societies have urged. But we have always held that the question of keeping or destroying Waterloo Bridge is a matter of lesser importance than the creation of a wide and generous outlook on the whole development of London. We must all appreciate the discernment and vigour which has been shown in the treatment of the matter by the *Times*, and we were glad to read in our contemporary the following words: "The Government, as it seem to us, have a perfect right, and, indeed a duty, to take in hand the larger problem at once. A far-sighted survey of all the future needs of London traffic across the river is overdue."

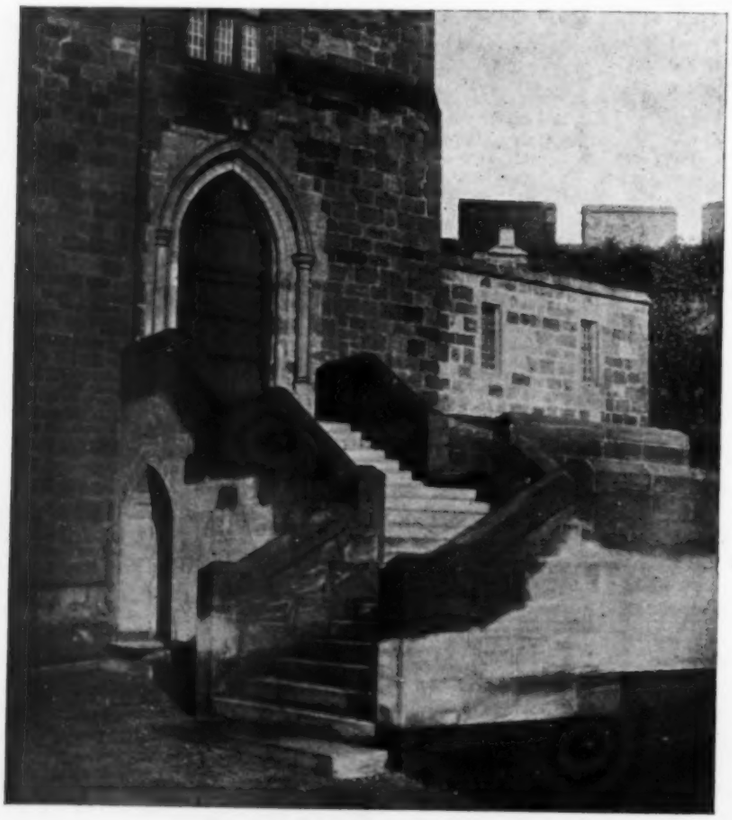
The Larger Problem. Thus the question as to the possibility of saving Waterloo Bridge, which expert opinion maintains is possible, is only part of a much greater problem, one which has been very clearly envisaged by expert knowledge of town-planning, and we can hardly doubt that the London County Council have in their own employ those who see the larger point of view beyond the mere supervision and design of new structures. Would they not be amongst the first to advise in a farseeing spirit the larger and greater policy for the Council to adopt? Would they not see the incalculable value of linking up the north and south sides of the river into a more real and workable unity, and amongst one of the necessities for this include a road bridge at Charing Cross? As it is, we agree with the *Times* that the Council should "be conscious that the policy to which they are committed constitutes an unpopular exercise of their powers. There exists in the country a much larger and even more important majority than their own."

A Parallel Case. The widening and improvement of the Ponte Vecchio, which was announced recently, caused a start of astonishment and dismay, and the proposed destruction of Waterloo Bridge had evidently paved the way for a genuine belief in the truth of the statement. But the realisation that the statement was issued as an ironical comment on our own misdeeds has brought into view with some emphasis the fact that the world may need something more than can be supplied by a purely economic and commercial outlook.

Artists and Committees of Taste. This subject is so recurrent that it is worth while to give consideration to the dangers of overlaying craftsmanship with these palliatives. The fact is, that however well intentioned the aim, in practice they offer no security for art and imperil the freedom of the artist. Such Committees tend to absorb the more amphibious, ambitious types—half artist, half amateur, or professional—who find it easy to undertake what the better-informed mind would not presume to undertake at all. For it is no less true of art than of commerce that, in the end, we must either give value or drop out; this is a better security than coercing our judgments as to what is good in art, so sterilising and confining it. The Committee of Taste does not, in fact, help, but hinders, in assuming that to be axiomatic which a later time will very likely reject, and would make art tongue-tied by authority. The rules and precedents, the letter of so-called tradition, are not the soil out of which free craftsmanship is born, and if the Committee of Taste had a little more belief in art, it would not believe so much in these Committees.

State Support of British Art. This is another of those subjects which are constantly recurring, and the letter contributed to a contemporary by Mr. Roger Fry is not without interest. Such so-called support, though no doubt more general in France than here, has done little for the national furthering of art or in promoting more general support for the artist. Speaking of France, the writer says: "By far the greater part of the public money has gone towards the endowment of fashionable pretension, or empty accomplishment"; and when we inquire into it, the case is not found to be much better here. "Preserve us," says the writer, "from philanthropic generosity, Ministries of Fine Art, Committees of Taste, and other such expensive machinery," which depress the arts in that they promote conformity to what may be but the conventional standards of the time. This, of course, reacts on the direction in which commissions are given, and, as a matter of fact, experience is wholly against the belief that State support extends the scope of employment, which, in fact, it rather tends to narrow.

A Plea for Ivy. The advantage of the wholesale removal of ivy is questioned by Mr. R. L. Robinson, of the Forestry Commission, who exposes certain misapprehensions in regard to its supposed destructive character. And it does seem as though we might leave a little more to Nature, who is less destructive than are some of our remedies. A correspondent writes: "We are no longer content with the changes which the law of life imposes, so are busy removing the ivy from our ancient and ruined buildings, which gives that poignant touch to old age and anoints it like grey hairs. Time brings its own romance as well as the building, and when we have cemented up the tops of ruined walls and refurbished ancient masonry, though it will last as a ruin a little longer, will it last with the delight



Entrance to Council Chamber, Shrewsbury Castle.
Restored by SIR CHARLES NICHOLSON.

of its "crannied walls," topped by wall-flower and girdled with ivy? At what a cost this arrested decay is secured is seen in the stark, swept, and municipalised look of many old ruins. Yet so well intended is this desire for preservation to arrest inevitable decay, that we can understand the error which it also includes, though adding that, to many of us, Time's rude hand falls gentlier and preserves more of beauty than is left when the hand of the preserver takes its place. And so with trees—and I am glad to see a correspondent in the *Times* urging the claims of ivy in this direction also. Who has not delighted in the great oaks on his woodland walks, girdled with ivy nearly up to the crown, which have yet stood for centuries and are such a lovely feature of the landscape?"

Shrewsbury Castle, when a private residence.

The Architectural Amenities of Oxford.

THE small committee of architects — Mr. E. P. Warren, Mr. F. M. Elgood and Mr. H. S. Rogers—who were recently appointed to advise the Oxford City Council on the preservation of the architectural amenities of the City, are likely to have a number of problems presented to them during the coming year. An immediate issue has arisen as to the repair of Magdalen Bridge that leads into the "High," described as "the finest street in Europe." The stone balustrade of this bridge needs replacing, and it is proposed to use an artificial stone. A correspondent writes: "There is already an outcry against this proposal on the ground that such stone will not harmonise with the remainder of the bridge, as it will differ in texture, and will colour. It is also urged that local stone cut by local labour should be used. A further problem that is being considered by the Consultative Committee is the future of the site now being cleared to the east of St. Aldate's. There is not unanimity either on the part of the governing body of Christ Church, the landlord of part of the site, or of the City Council, that this should remain open and unbuilt upon. An interesting plan has been prepared by Mr. H. S. Rogers, showing what magnificent vistas might be obtained across Christ Church meadows. It is also suggested that a Greek theatre to be built by the promoters of the Oxford Playhouse Movement might be erected to the south of this area. There is, however, a body of opinion that favours the commercial development of this site for the erection of small shops and cottage property."

Font, West Hanningfield Church, Essex.

Futurist Architecture.

THE *Observer's* Rome correspondent tells us that Signor Marinetti, the futurist leader, is now interesting himself in architecture. He condemns, we are told, the world's architecture, "Classical, solemn, hieratic, scenographic, decorative, monumental, beautiful, and pleasing," and he disapproves of "all reconstructions and reproductions of ancient monuments and palaces." It is difficult to believe that anyone sufficiently interested in architecture to express an opinion on it could condemn the monuments of the past, and one may doubt whether Marinetti means all that he apparently says. To object to the practice of attempting to construct modern buildings on old lines represents, of course, a common enough attitude in England.

Ephemeral Building.

MARINETTI'S proposal appears to be that our architecture of the future must be audacious and simple, built of such materials as reinforced concrete, iron, glass, cardboard, textile fibres, and other substances that are light and elastic. The city of the future is to be fragile and transitory, and it is to harmonise with its surroundings and to render the material world a direct projection of the world of the spirit. If each generation is to rebuild its own cities, as he suggests, we should have little time for anything else, and none to make our cities pleasant to live in or even weather-proof. Some of the latest seaside bungalow resorts are perilously like the cardboard and textile fabric towns that Marinetti recommends; they are certainly ephemeral, and that they fail to present any possible spiritual significance may be due to errors in design It is difficult to reconcile extremist points of view, such as that of this "futurist architecture," with the smallest modicum of common sense.

Rural Industries.

THE Prime Minister ha again done something to help forward the better spirit amongst our people. His words on behalf of modern art the other day included a reference to the Development Commission which the Government has set up; and as something of the work of Rural Industries will appear at the forthcoming Industries Fair at the White City and their relation to this Commission, the words of the Prime Minister have come with peculiar force and appropriateness.

Old Gothic Windows.

GENERAL NEWS

Change of Address.

Mr. Ernest H. Wright, F.S.I., is removing his offices from 9, Thomas-street, Woolwich, to Midland Bank Chambers, 1 & 3, Powis-street, Woolwich. Telephone number as heretofore: Woolwich 215.

Partnership.

Mr. William J. Fitt, L.R.I.B.A., of 126, Bishopsgate, E.C.2, has taken into partnership Mr. L. Prior-Hale. The firm will be known as Messrs. Fitt & Prior-Hale.

More Ancient Monuments.

Hall-i'-th'-Wood, Bolton, and Ferry Bridge, Pontefract, have been scheduled as ancient monuments.

Bradford Housing Scheme.

Bradford City Council has decided to spend £220,000 on building 402 concrete houses, and 80 brick houses.

Proposed New Forth Bridge.

Edinburgh Town Council has decided to grant £1,000 towards the £10,000 required for the cost of a preliminary survey for the proposed road bridge across the Forth.

The Institute of Architects of Ireland.

Mr. James H. Webb, F.R.I.A.I., of Messrs. O'Callaghan & Webb, of Dublin, has been elected President of the Royal Institute of Architects of Ireland.

Methodist Shrines Restored.

The chapel in City-road, London, E.C., in which John Wesley preached, and his house adjacent, have been restored at a cost of over £10,000.

British Bricks.

The London County Council has contracted for the supply of five million bricks of British manufacture. It was stated at a recent meeting that British bricks had been found to be the most economical for the Council's houses.

Roman Remains at Canterbury.

During excavations in connection with the installation of a telephone repeating station in the London-road, workmen unearthed, about three feet below the surface, six Roman cinerary urns and an earthenware goblet.

Nottingham's New Residential Estate.

Six miles of new roads are being constructed through Wollaton Park, bought by Nottingham Corporation from Lord Middleton. One thousand steel houses of the artisan type and 200 villas of a better class are to be erected. There is to be a golf course, playing fields, a public park, &c., and a light railway and new bridge over the canal to facilitate transport.

Sheffield City Architect.

A special committee of the Sheffield City Council has decided to recommend the appointment of Mr. William George Davies, A.R.I.B.A., to succeed Mr. F. E. P. Edwards as City Architect. Mr. Davies is at present architect to the Belfast Corporation, and previously held appointments as assistant architect for Bradford, and assistant architect to the county architect of Essex.

Obituary.

We regret to record the death of Mr. Walter B. Wood, a well-known architect, of Gloucester.

The death is announced, at the age of 86, of Mr. Joseph Blaikie, architect, of Hawick.

We regret having to record the death of Mr. W. B. Wood, A.R.I.B.A., at Barnwood, Gloucester, aged 74.

The death took place at Shrewsbury of Mr. Frederick Davies, architect and surveyor, at his residence, Avondale, West Hermitage, Belle Vue, at the age of 80.

Locarno Room Adornment.

In commemoration of the signing of the Locarno Pact, the suite of rooms at the Foreign Office in which the ceremonial took place is to be redecorated on an elaborate and dignified scale. The Fine Arts Commission has decided on the restoration of the gold ornaments and moulding on the ceilings and walls, and the broad spaces and backgrounds are to be painted in tones of vellum.

Ancient City Shop Threatened.

Messrs. Ring & Brymer, an old firm of City caterers, have given notice of their intention to apply to the licensing justices for a transfer of their licence from Cornhill to 39a, Old Broad-street. The little green-fronted shop on Cornhill, nearly 300 years old, bearing the name of "Birch" over the door, will thus disappear.

Sir John Soane's Gift.

The Trustees of Sir John Soane's Fund will hold their annual meeting on Wednesday, March 10, at 13, Lincoln's Inn Fields, W.C. 2, to distribute the interest (about £150) accrued during the year on the principal sum given by Sir John Soane as an anniversary gift for the relief of distressed architects, widows, and children of deceased architects, in distress. Forms of application are to be obtained at the Museum, and must be filled in and delivered there on or before March 1. After which no application can be received.

Turin Building Exhibition.

We understand that the Second International Exhibition of Building Art, which will be held in Turin during May and June of this year, will show a great extension on its predecessor; modern architecture will be represented in all its phases from general town-planning schemes to every form of building design. Ancient architecture will also occupy an important place, as well as examples of the most up-to-date building methods.

MEETINGS

FRIDAY, *February 5.*

Glasgow Architectural Craftsmen's Society.—Mr. A. Proudfoot on "Sculpture." At the Royal Technical College. 7.45 p.m.

Royal Sanitary Institute.—Mr. A. E. Mumby on "Physics Chemistry." At 90, Buckingham Palace-road, S.W.1. 6 p.m. (Above is also to be read on February 8.)

Royal Sanitary Institute. — Discussion on "Town Planning and Improvement Areas," to be opened by F. Marsden, City Engineer and Surveyor, Bradford; F. White, Chief Sanitary Inspector. At the Town Hall, Bradford. 5 p.m.

MONDAY, *February 8.*

Surveyors' Institution.—Mr. E. M. Konstam on "The Rating and Valuation Act, 1925." At 12, Great George-street, S.W.1. 8 p.m.

Institution of Structural Engineers.—Discussion to be opened with a short paper by Mr. H. Kempton Dyson. At 296, Vauxhall Bridge-road, S.W.1. 6 p.m.

TUESDAY, *February 9.*

Institution of Electrical Engineers.—Professor S. Parker Smith on "An All-Electric House." At the Royal Technical College, Glasgow. 7.30 p.m. (Above also to be read at Newcastle-on-Tyne on Monday, February 8.)

WEDNESDAY, *February 10.*

L.C.C. Central School of Arts and Crafts.—Sir Banister Fletcher, V.-P.R.I.B.A., on "Famous Elizabethan Mansions." 6 p.m.

Institution of Structural Engineers (Lancashire and Cheshire Branch).—Professor A. E. Richardson on "The Relation of Architectural Design to Structure."

Liverpool Architectural Society.—Mr. H. Chalton Bradshaw on "Art Commissions." At 13, Harrington-street.

Edinburgh Architectural Association.—Mr. J. A. Boyd on "Heating and Ventilation." At 15, Rutland-square. 8 p.m.

THURSDAY, *February 11.*

Institution of Electrical Engineers.—Annual Dinner. At the Hotel Cecil, Strand, W.C. 7 p.m.

Society of Antiquaries.—Mr. E. T. Leeds on "Excavations at Chun Castle, Penzance." At Burlington House, W.1.

COMPETITION NEWS

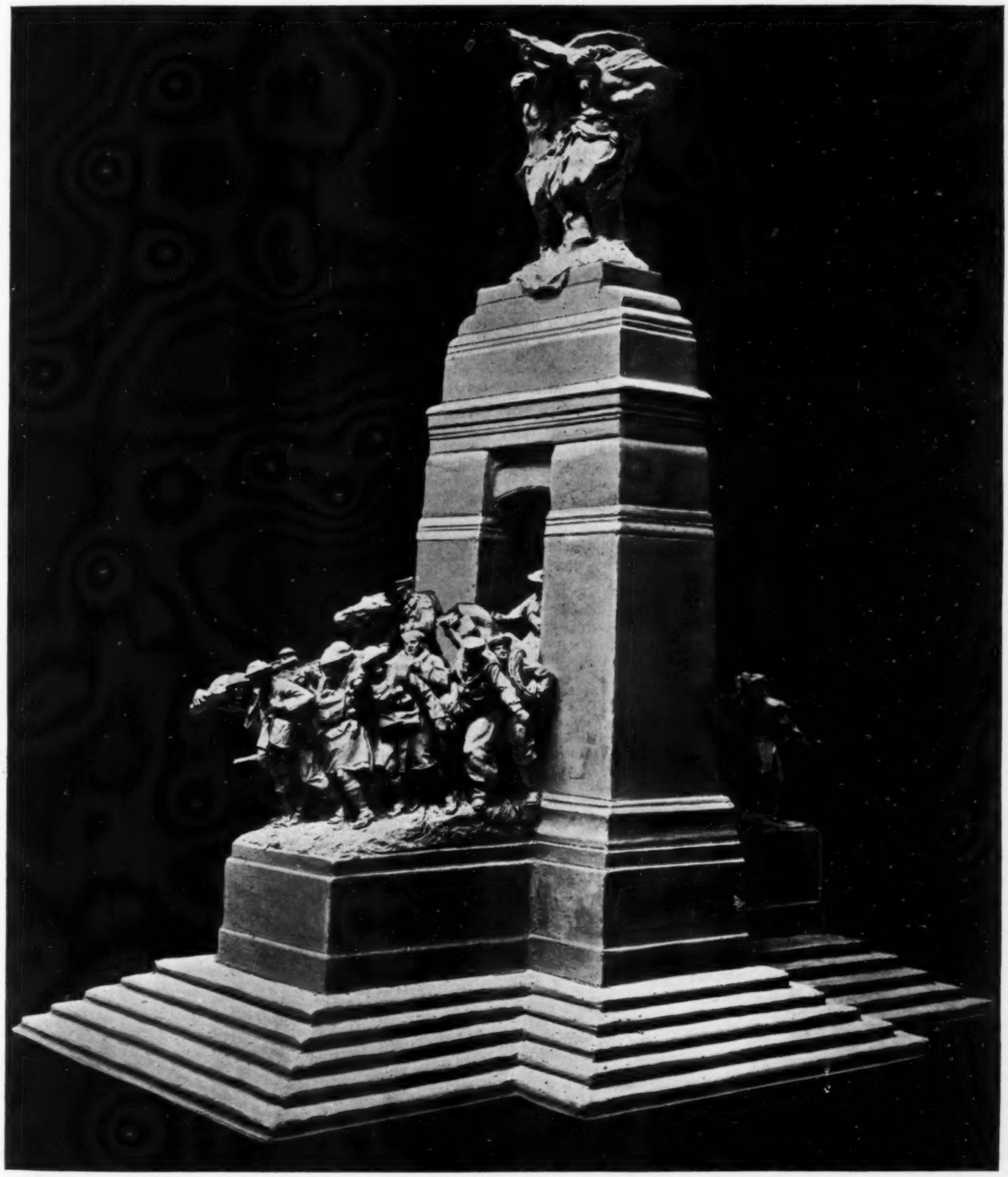
Birkenhead Art Gallery and Museum.

The sending-in date for this competition (particulars of which were last given in our Competition Table for January 22) has been extended to February 15.

Competitions Open.

Café, Ramsey, Isle of Man. Cafe to be erected on disused bandstand, Mooragh Park. Apply Mr. James Bell, Clerk, Town Hall, Ramsey	Particulars published in "Builder." Jan. 22	..	Sending-in date. Feb. 3
Public Memorial, Blackpool. Mr. E. Bertram Kirby, F.R.I.B.A. assessor. Apply to Mr. D. L. Harbottle, Town Clerk, Town Hall, Blackpool. Deposit £1 1s.	Dec. 11	..	Feb. 13
Australian War Memorial, Canberra. Open to architects of Australian birth. Apply High Commissioner, Australia House, Strand, London	Aug. 14	..	Mar. 31
New Offices for West Bromwich Permanent Benefit Building Society. Limited to architects within a radius of fifteen miles of Birmingham. Premiums: £100, £75, and £50. Mr. W. Alexander Harvey, F.R.I.B.A., assessor. Apply to Mr. John Garbett, Secretary, 301, High-street, West Bromwich	Jan. 15	..	Mar. 31
Public Hall, Topsham. Premiums £50, £40, and £30 respectively. Mr. Walter Cave, F.R.I.B.A., assessor. Last day for questions, Jan. 1, 1926. Designs to be sent in by April 1, 1926. Conditions from the Clerk to the Parish Council, Topsham, on deposit of £1 1s.	Jan. 1	..	April 1
Isolation Hospital for Infectious Diseases, Doncaster. Mr. T. R. Milburn, F.R.I.B.A., assessor. Apply, Mr. W. Bagshaw, Town Clerk, Doncaster. £1 1s. deposit required	Jan. 29	..	—
Australian National War Memorial, Villers Bretonneux, France. Limited to Australians under special conditions. Apply Military Headquarters in capital city of each State, or High Commissioner's Office, Australia House, Strand, London. £2 2s. deposit required	Dec. 25	..	April 30
Papers on subjects connected with Heating and Ventilating. Two prizes of £10 10s. and one of £5 5s. offered by the Institution of Heating and Ventilating Engineers	Dec. 25	..	May 1
Royal Society of Arts Competitions for Industrial Designs. Apply Secretary, Royal Society of Arts	Jan. 1	..	June
Royal National Eisteddfod of Wales, Swansea, Competitions: (1) National Parliament House of Wales (Prize, £100); (2) Street Facade to a Large Stores (Prize, £25); (3) Set of Measured Drawings of Architecture (Prize, £25). Apply for programme to publishers, Messrs. Morgan & Higgs, Heathfield-street, Swansea (1s. 3d. post paid). Mr. Arthur Keen, F.R.I.B.A., Assessor	Nov. 6	.	July 15
Incorporated Architects in Scotland: (1) Rowand Anderson Medal and £100: City Art Gallery and Museum; (2) Rutland Prize (£50) for Study of Materials and Construction; (3) Prize (£10 to £15) for 3rd year Students in Scotland; (4) Maintenance Scholarship, £50 per annum for 3 years. Apply Secretary of the Incorporation, 15, Rutland square, Edinburgh	Nov. 6	..	—
Secondary School for Girls, Worcester. Premiums 100 guineas and 50 guineas. Mr. Herbert T. Buckland, assessor	Dec. 11	..	—
Infectious diseases hospital, Blaydon, for 72 beds. (Date of application for particulars now passed)	Dec. 18	..	—
Builder (Constructional Problem) Competition for those not over 25 years of age engaged in the pursuit of architecture and building. See announcement each week.	—	..	—
*Proposed new church, Monmouthshire	—	..	—
*Proposed new school, Gosport	—	..	—
*Proposed new hospital, Guisborough	—	..	—

* Competitions when "warned" or vetoed by the R.I.B.A. are starred.



Model of Design for the Canadian National War Memorial to be erected at Ottawa.

MR. VERNON MARCH, Sculptor.

PRESIDENT'S ADDRESS TO STUDENTS.

AT last Monday evening's meeting of the R.I.B.A. the President, Mr. E. Guy Dawber, delivered his Address to Students. Before the reading of the paper the Hon. Secretary announced with deep regret the death of Mr. Charles Herbert Ashworth, elected Fellow 1906; Mr. Walter Bryan Wood, elected Associate 1881; Mr. France Spence Baker, elected Associate 1892, Fellow 1901. (Mr. Baker was a Past-President of the Royal Architectural Institute of Canada, and for a period of 20 years was R.I.B.A. Hon. Secretary for Canada, resigning the position at the end of last year.) A vote of sympathy and condolence with relatives of the deceased was passed by the meeting in silence.

In the course of his Address the President said that they (the students) had their own ideas, and had no doubt, and quite rightly, settled long ago the plan of life and work they would follow, so that he did not propose to offer any advice on that subject. But perhaps they could profit, if they wished to do so, by the experience of older men, and especially by their mistakes and failures, and so he proposed to tell them a little of the difficulties and the problems which occurred in every-day practice and the facts which had to be faced in the calling which they had chosen. The first—and a very important point in their profession, and indeed in any profession—was the acquisition of a good, sound education, for without it an architect, however gifted as a designer, could neither cope with the difficulties which continually arose in his daily work nor meet his clients on equal ground. At the same time, although he was a firm believer in the advantages of an academic training, he was equally certain that an academic education only would not be of any use unless they had practical knowledge and understanding as well. If they studied the lives of the men who have been successful they would observe that they had achieved success primarily through love of their work, but they would also realise that affection for the chosen pursuit was not by any means sufficient, and that the most important thing was the absolute determination to pass nothing as understood which was not understood. It was all very well to be persevering and ambitious, but these qualities would not serve unless they had practical knowledge and a grasp of their subject. All their academic prizes and learning might be mere lumber unless they brought increased understanding.

At the outset of his career he always found that one of the most difficult things was to visualise the ideas of his clients, not because he was incapable of doing so, but because his enthusiasm for his own conceptions blocked the view. He had learned in years of practice the absolute necessity of concentrating all one's efforts on the complete understanding of one's clients' views and wishes, though he was not suggesting the advisability of carrying out all their ideas. Far from it.

Another difficulty which confronted one was the necessity of disregarding the importunities of small details and subordinating them to the main conception. The difficulty of knowing what to do was often nothing compared to the difficulty of knowing what not to do. And while on this subject of detail, he was reminded of the admirable advice given him years ago by a very great and shrewd man of the world who had both knowledge and a great love of art. He told him (the speaker) when he (the speaker) started practice for himself never to neglect the smallest trifle that went wrong in any commission that he had to execute, and, however irksome and infinitesimal it seemed, to give it his own personal attention at all costs. He also urged him never to delay the immediate settlement of the smallest detail, or the answering of letters; for arrears of correspondence and small things to be attended to, if allowed to accumulate, worried and depressed like unpaid debts. All these precepts he had always tried to follow. Life, after all, consisted mainly in the settlement of small details of daily routine. It was not often we were called upon to make an important decision or to solve an insuperable difficulty; but when we had to face a serious problem we found that the settling of some minor business about which we could see our way clearly would often help to overcome the serious trouble. It was the doing of what we could do which helped us in the doing of what might seem impossible.

Another of the difficulties of the calling they had adopted, which comprised so wide and various a scope and required such an exacting apprenticeship, was the necessity for fitting in one's artistic ideas with the stern realities of everyday business. Neither genius nor ability would avail if the practical side was neglected. What credit would they gain for their charmingly designed rooms, their beautiful elevations, or their well-chosen materials, if the rain got through the walls, or the chimneys smoked, or their work cost more than it should? These might alienate at the end of their commission the friendship and esteem of a client which they might have greatly prized. Young men were very fortunate to be living in this age with all the facilities and opportunities provided for study. When he looked back on the days of his pupilage in a country town with none of the advantages of to-day, he was amazed at the progress being made every year in the systematic education of architects in the various schools and universities throughout the country. The haphazard method of teaching, or not teaching at all, in his early days, depended in a great measure on the master in whose office they served their apprenticeship, and it said a great deal for the system of those days that all their most excellent and brilliant architects went through this method of training. On the other hand, it was open to question whether the teaching in our architectural schools to-day tended not only to the elimination of individuality but to the production of a stereotyped sameness of idea—of mass production in fact. This perhaps was unavoidable when the students in each school went through the same training and were taught to solve their problems in more or less the same way; but here again everything would depend upon the student himself, whether he wished to become a mere cog in the architectural machine, or to make his own way and strike out a line for himself.

He had always felt that students should be taught architecture by architects themselves, by those who came into daily contact with the difficulties and facts of every-day practice, and kept abreast of the problems of the moment. In days gone by all our great painters and sculptors learnt their arts in the studios and workshops of the actual craftsmen themselves—they saw work being carried out before their eyes by men who gained their living by it, a system followed, he believed, in France to-day. Our schools encouraged this training and urged that all students, after passing through their school or university course, should spend time in an architect's office as improvers or assistants before attempting to commence practice on their own account.

Many years ago, through force of circumstances owing to serious overstrain of his eyes, he spent some years as clerk of works on two large buildings, one in London and one in the country. For some three or four years he daily superintended the quarrying and working of stone, the shaping and fitting of timber, and the placing of each in their respective positions in the building; the arrangements of systems of heating, electricity, and sanitation, all of great interest in themselves, and each contributing towards the completion of the whole structure. Many people considered this sort of training superfluous and that work of this nature should be delegated to others, but without practical knowledge of the capabilities and limitations of materials it was impossible to utilise them properly in buildings so as to obtain the best results and the relative values from each. The experience gained of the use of material and of simple problems of construction had been of inestimable value to him all his life, and he would strongly urge them to try and follow the same course.

In the attempt to make their work stand out and surpass that of their contemporaries, while many of them would no doubt be attracted to the latest movement, it was just as well to pause before they allowed themselves to be carried away by novelty, for the essential thing in originality was the idea, and if it was a new idea it was worth noting. But do not easily be led off the beaten track to follow it. Just as they knew that the best building materials were their own native stone, brick and tile, so they would find that the best buildings from every point of view were those which were worked out in a simple, straightforward, common-sense manner. The study of good buildings in any country showed that the finest proportions, the happiest effects, both in plan and elevation, were obtained in the simplest and most direct way.

The question of taste in this country to-day was a very serious one, a question which was greatly exercising the minds of all lovers of town and country. When they came to think of it, it was highly improbable that in Renaissance times the "man in the street" in Rome or Florence really possessed any more definitely trained taste in architecture than our people to-day. But without doubt they had some instinctive sense of proportion, dignity, and suitability that enabled them to appreciate the work of their builders. If we could only reach that stage in this country we should have infinitely better architecture. This was a question which affected them as much as it did everyone who was alive to the serious and growing danger in our midst, for in our hands lay much of the future remedy. Although a great deal could be gained by publicity, this in itself was quite insufficient to meet the case, for the average citizen would pay little attention to propaganda about a subject in which he was not interested. The indifference of the public to the importance of civic beauty was a lamentable and tragic fact. We might look upon the recent acrimonious criticisms in connection with the Rima figure as a most salutary sign had they not been so misdirected. After all, the figure of Rima, whether they approved of it or not, occupied only one small and very secluded spot in Hyde Park. It was seen by only a small percentage of people, who mostly went out of their way on purpose to inspect it. But, unfortunately, the buildings which we saw throughout the country, in its towns and villages, and in the heart of beautiful rural spots, were much more in evidence. Had the public, who were so upset by the Hudson Memorial, raised their voices against the ruin of our countryside, how deeply and with what gratitude should we have welcomed their interest.

There could not be good architecture in any country unless there was a public demand for and an appreciation of fine work. When we looked back to the days of ancient Rome, we saw that all its great monarchs and legislators understood and appreciated the value of great architectural monuments as an appeal to the civic pride and patriotism of the people. Julius Cæsar built the Basilica Julia in the Forum, Agrippa the Colosseum, and Caracalla gave the people the marvellous baths which still bore his name, and which, in spite of his vices and cruelties, gained him great popularity. Maxentius, again, who understood the majesty of the

law, added to its importance and dignity by erecting the basilica which was now known as the Basilica of Constantine; and in later times we saw the indirect influence of architecture on the religious mind and how the Church had always fostered its appeal to the senses by erecting the most beautiful buildings in which to minister to the religious wants of the community.

Think what an opportunity had been lost in this country since the close of the war, when, instead of erecting the countless memorials, which, after all, were but the expression of the sentiment of the moment, the nation had demanded some great memorial which would have stood for all time as a symbol of the country's greatness and sacrifice. To-day the public of all classes was largely indifferent to its surroundings. It knew nothing of the claims of architecture or its influence upon our lives. Although architecture, in certain instances, as practised to-day was never at a higher level, unfortunately this was only a small proportion of the whole, the bulk of the buildings we saw around us being of inferior merit and probably not the work of architects at all.

Their profession, unfortunately, lent itself easily to the charlatan and the ill-informed, many of whom possessed no architectural qualifications, and the inability of the public to discriminate between the good and the bad perpetuated the evil. The only remedy lay in education. We were doing our utmost to train students to become good architects, to give the best possible tuition to fit them for the positions they would ultimately be called upon to fill, and if they did this it was only right that the public generally should be educated to understand what architects were doing and striving for. The teachers in our elementary and secondary schools, and for that matter in our public schools, as a rule knew nothing about architecture, nor of its importance to the community at large; and even the teachers at our colleges and universities were in the main ill-equipped in that direction. He did not suggest that they or their pupils should be taught architecture in the technical sense, but he did feel that we should try to get into the curricula of our schools some definite recognition of the importance of architecture and town planning to the ordinary citizen. The student should be taught the value of dignified buildings, of well-arranged streets and open spaces, of cleanliness, order, and spaciousness in our public thoroughfares, and the maintenance of the civic spirit in the city, town or village he dwelt in. Had this been done 30 or 40 years ago the lamentable sights we saw on all sides, the ill-considered buildings placed without regard to their environment, each striving to outdo the other, would never have come into being.

In any social assembly to-day they would find the subjects of architecture, painting and sculpture seldom mentioned, seldom even considered as worthy of discussion, unless to express the feelings of those who borrowed their ideas from the current press upon the ugliness of Rima, the unsuitability of the Artillery Memorial, or the replacement of the Piccadilly fountain. Any intelligent criticism of the architectural buildings in our towns, cities, or villages was never heard. The subject was considered as too uninteresting for discussion, and the average man was as ignorant of its real importance in relation to civilised life as the inhabitants of Timbuctoo. In the eighteenth century, and even later, no well-educated gentleman was considered to have completed his studies unless he had made the grand tour of the principal towns and cities of Europe. If they read any of the old diaries and memoirs they would find a large part of their authors' travels was spent in seeing and studying with intelligence the achievements of architecture and the kindred arts. On their return they influenced that happy spirit of cultured design, good proportion and refined detail that they almost invariably saw in eighteenth-century work. At that time there was a definite tradition of design and craftsmanship throughout the whole country. If a house was built, however small, some simple formula was followed; good, well-proportioned doors and windows; simple brickwork and tiled roof; a rational use of material that tended to produce a sense of quiet refinement that was sadly lacking to-day.

The late W. S. Gilbert never wrote a truer saying than when Bunthorne remarked in "Patience" that "Art stopped short at the cultivated court of the Empress Josephine"; and if one thought it out, the beginning of the nineteenth century did see the dying out of great craftsmanship and traditional design in architecture, and though much had been done, and was being done, to foster it again, after all it was but a sporadic effort. For remember that all great art was based on tradition, and however much they might wander in the seductive by-ways of so-called originality, they would ultimately return to the fold of traditional sanity. And this was where young men could do so much to help. By their training they were taught to understand the meaning of team work, or, in other words, they were beginning to establish a tradition in architectural design, some settled method by which, in the future the perpetuation of the trivialities we saw on all sides would be impossible.

All of his young listeners were greatly to be congratulated in choosing a profession which was worthy of their enthusiasm and highest endeavour, and in the service of which no man could do better than devote his life. Indeed, he envied them. What would he not give to be standing where they were now, with the future before them. He should never forget the joy when at last he got his first job and watched its daily progress: the setting-out of the building site, the digging of the trenches for the foundations, the gradual rising of the walls, the covering of the whole by the roof, the fitting up of the internal details, and, finally, the whole work completed. And then how he wished he could rebuild it all over again quite differently! This dissatisfaction with one's work, though discouraging, had often a salutary effect; it was indeed a good plan when you began to think yourself the last word as an architect to steady yourself by remembering the great men who went before.

When they set up in practice and things went wrong, as sometimes they were bound to do, in moments of despair they might feel that the bottom was falling out of everything. Never be discouraged. Work was the thing, and if they stuck to their work and gave it the attention which affection engendered they would certainly find, after waiting, one door open—it might be only a small and unimportant door, but it would lead to the opening of other doors.

Discussion.

Sir Frank Dicksee, P.R.A., proposing a vote of thanks, said it was difficult for the public to understand architecture to-day, when there was so much divided opinion even among architects themselves. He almost despaired of conceiving a way of bringing about the desired improvement in public taste.

Mr. J. Wells, Vice-Chancellor of Oxford University, supporting the vote of thanks, said that in spite of great prosperity, some of our villages and towns still preserved some of the beauty of the past. No other country in the world could show, for example, such parish churches as we had—so characteristic of the people and containing so much artistic work, though he recalled that an old friend had said that the Oxford Movement had done much more harm to the physical fabric of the Church than either Edward VII's Commissioners or Cromwell and his Ironsides. Much beautiful old work had been swept away during last century. Was it not a safe rule to say that if a building was useful and sound still, and built in the best way of its period, it should be preserved? He remembered that the Chapel of Exeter was said to be falling down, but when they came to demolish it they had to use gunpowder. He thought that Sir Frank Dicksee took rather a gloomy view of the future for architecture. Was it not possible that democracy might give architecture a new chance?

The vote of thanks having been accorded with acclamation,

The President then presented the Prizes and Studentships for 1926.

FOLLOWING are notes from the Minutes of Council, January 18:—

R.I.B.A. Prizes and Studentships.—The award of the R.I.B.A. Prizes and Studentships for 1926 was approved and ordered to be submitted to the General Body.

Building Research.—On the advice of the Science Standing Committee, it was decided to invite the Institute of Builders to nominate three members to attend the February meeting of the Science Standing Committee to discuss the question of the possibilities of co-operation in building research work between the Institute of Builders and the Science Standing Committee.

The Building Industry.—On the advice of the Practice Standing Committee, the Council requested the Architects' and Builders' Consultation Board to take into immediate consideration as a matter of urgency the pending termination of the agreements regarding wages and hours in the building industry.

Special Election to the Fellowship.—Under the provisions of the Supplemental Charter, 1925, Clause IV, the following architects were elected as Fellows of the R.I.B.A.: Mr. T. H. Lyon, Cambridge; Mr. Henry Sproatt, Toronto; and Mr. E. R. Rolph, Toronto.

Final Examination.—On the advice of the Board of Architectural Education, it was decided that students of Exempted Schools who are entitled to exemption from the Final Examination shall be required to come up for election as Associates within two years of the completion of their school course exempting them from the Final Examination, and that students who do not present themselves for election as Associates within those two years, except with the special permission of the Board, shall be required to take the R.I.B.A. Final Examination in the usual way if they wish to qualify for candidature as Associates.

Diplomas of Architectural Schools.—On the advice of the Board of Architectural Education, it was decided that members holding the Diplomas of Recognised Schools shall be entitled to have the fact recorded against their names in the R.I.B.A. Kalendar.

Membership.—The following applications for membership were approved: As Fellows, 10; as Associates, 33; as Hon. Associate, 1.

The following nominations for membership for election, February 15, were approved: As Fellows, 20; as Associates, 6; as Hon. Fellow, Sir Frank Dicksee, P.R.A.; as Hon. Associate, Mr. F. L. M. Griggs, A.R.A.

Twelve Licentiates were elected under the provisions of Section III(*f*) of the Supplemental Charter of 1925.

Five Subscribers were elected under the provisions of Section VI of the Supplemental Charter of 1925.

Resignations.—The resignations of the following members were accepted with regret: A. Macpherson, Robert W. Carden, T. L. Perkins, L. H. Bullock, R. S. Cowper, A. G. Hall, D. Lyle, James Neill, J. F. Lancaster

The Archæological Joint Committee for Organising the Control of Antiquities in the Near and Middle East.— Mr. Ernest T. Richmond, F.R.I.B.A., was invited to represent the R.I.B.A. on the Archæological Joint Committee for Organising the Control of Antiquities in the Near and Middle East.

Imperial Congress of the Royal Sanitary Institute, July, 1926.—Mr. H. D. Searles-Wood and Mr. J. Ernest Franck were appointed to represent the R.I.B.A. at the Imperial Congress of the Royal Sanitary Institute in July, 1926.

The British Engineering Standards Association.—Mr. Harvey R. Sayer, A.R.I.B.A., and Mr. Edwin Gunn, A.R.I.B.A., were appointed to represent the R.I.B.A. on the following recently established Sub-Committees of the B.E.S.A. Sectional Committee on Building Materials: (1) Sub-Committee on a Standard Specification for Grey and White Hydrated Lime; (2) Sub-Committee on Standardisation and Simplification with regard to Slates and Tiles.

Society for the Promotion of Hellenic Studies.—A contribution of £10 10s. was made to the

funds of the Society for the Promotion of Hellenic Studies, for the year 1925.

Examinations, 1926.

Following are the dates for the forthcoming R.I.B.A. Examinations :—

Intermediate Examination.—May 28, 29, 31, June 1 and 3 (last day for receiving applications, April 23); November 19, 20, 22, 23 and 25 (last day for receiving applications, October 16).

Final and Special Examinations.—July 7, 8, 9, 10, 12, 13 and 15 (last day for receiving applications, June 4); December 1, 2, 3, 4, 6, 7 and 9 (last day for receiving applications, October 30).

Examination for the R.I.B.A. Diploma in Town Planning.—June 30, July 1, 2 and 5 (last day for receiving applications, March 1).

Statutory Examination.— ctober 20, 21 and 22 (last day for receiving applications, October 2).

R.I.B.A. Visiting Board.

Special meetings of the R.I.B.A. Visiting Board (excluding meetings connected with visits to schools of architecture), will be held at the R.I.B.A. on June 24 and October 21. Schools of architecture wishing to bring any matters before the R.I.B.A. Visiting Board should communicate with the Secretary to the Board of Architectural Education not later than June 1 and October 1.

R.I.B.A. Maintenance Scholarships Scheme.

The Board of Architectural Education have been informed that the Council of the Artists' General Benevolent Institution have decided to participate in the R.I.B.A. scheme and to grant a Maintenance Scholarship, provided the parent of the student is eligible for assistance from the Institution. Mr. Edmund Wimperis, F.R.I.B.A., has been appointed to represent the Institution on the R.I.B.A. Maintenance Scholarships Committee, the first meeting of which will be held shortly. In addition to those provided by the R.I.B.A. and the Artists' General Benevolent Institution, scholarships have been given by the Society of Architects (now amalgamated with the R.I.B.A.), and by the proprietors of *The Builder*; while the Rev. Dr. and Mrs. Hugh Currie have decided to found, in due course a Maintenance Scholarship in memory of their son.

CORRESPONDENCE

[While we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

The Planning and Equipment of the Small House.

SIR,—Mr. Edwin Gunn's series of articles on the planning and equipment of the small house is interesting and instructive to both layman and architect, and it is to be hoped that it will bring home to prospective building owners some of the difficulties with which the architect has to contend in this type of work. Especially is it difficult to convince clients of the unalterable economic laws of building and of the fact that there is a point at which minimum cost and maximum accommodation cease to be compatible. It is only too easy to tell the client what he wants to hear, which results in the inevitable astonishment and disappointment when the tenders come in. On the other hand, to tell him frankly at the outset that it "cannot be done for the money," merely seems to exasperate him and cause him to look upon the architect as incompetent. My frankness has on more than one occasion lost me clients, who proceeded either to instruct another (unqualified) and, it is to be presumed, less conscientious architect, or to purchase direct from a speculative builder.

It would, I feel sure, be interesting to your readers if Mr. Gunn were to tell us—

(1) The cost of each of the houses at Ruislip.

(2) How he proposes lighting the halls of the three plans (the "servantless" and "servant run houses") illustrated in his second article.

LINCOLN'S INN.

SOME OBSERVATIONS UPON THE CONDITION OF THE BUILDING INDUSTRY—III

BY JOHN ANGUS.

[**** The opinions expressed in this article are not necessarily our own.—ED.]

THE attempt to deal with the labour problem brings one into immediate contact with the dominating factor in the present position of the building trade. Indeed, if the problem is regarded rightly, there is a distinct probability that the labour problem will have a decided influence upon the future of the building trade. There is no definite indication that a permanent influence, unsatisfactory to the building trade, is anticipated by those in authority. Upon the question of labour two factors arise: (1) A decrease in numbers of skilled labour; and (2) a decrease in the amount of work produced by labour.

Dealing with these matters, the speculations raised in a recent discussion by Major Harry Barnes are intensely interesting. It is possible perhaps, to read more into them than was meant. The suggestion that people were more and more tending to keep away from the more arduous occupations and seeking to live in the easiest way open to them, contains a number of thoughts which are deeply significant. It can mean this: That people are not only looking for less arduous work, but demanding the means to live without working for them. In seeking to live in the easiest way every one lays himself open to the cheap sneer that he has found it in argument instead of in work. The easiest way to live has actually been discovered. It is to demand a wage per hour which is high compared with any previous standards, and when the demand for labour falls off, as a consequence, the State must provide. Listen to Mr. Aldous Huxley's delightful philosophy: "But being a young man of sense, he preferred leisure, if a choice had to be made, to money. . . . Money brings no satisfaction if one has to work for it; for if one works for it one has no time to spend it." By contrast, the philosophy of this age is much more complicated. It does not intend to make a choice; it wants both.

Major Barnes suggests that if we want increased output we must look for it in improved mechanical methods rather than in increased human, physical energy. The history of industrialism confirms the wisdom of this observation. Improvements in machinery and equipment have resulted in enormous financial and leisure gains to the worker. In terms of economics, leisure must be paid for by someone, and it is not merely a question of who is going to pay it, but whether it can be paid. Under our present industrial conditions there is conclusive evidence in bad trade and unemployment that the leisure is not being balanced by the output.

The assumption that increased output is necessary, postulates a situation where the goods produced are beyond the purchasing capacity of the public. At this stage the economic situation for masters and men centres round the problem of how to reduce production costs and stimulate the demand. The desire to maintain a certain wage standard for labour has naturally directed an enormous amount of attention to the improvement of mechanical methods to reduce the selling price of the goods. From every point of view this endeavour to acquire leisure, whilst still maintaining the output by mechanical means, is all to the good. But obviously there must be certain limits which must be recognised. It is possible that industry as a whole in other countries may be better equipped than those of Great Britain, but it is generally admitted by economists and those engaged in business that competition insures a high degree of efficiency always. Whilst admitting the necessity for efficiency in equipment, it is unwise to look for too much in this direction to justify the shortcomings of labour. It will be recollected that the advocates of the shorter working day advanced their theory in the belief that there would be no reduction of output. Industry is now faced not only with a reduced output per day, but with a reduced output per hour. So far as the building trade is concerned, there would seem to be a tremendous gap to be made good by machinery.

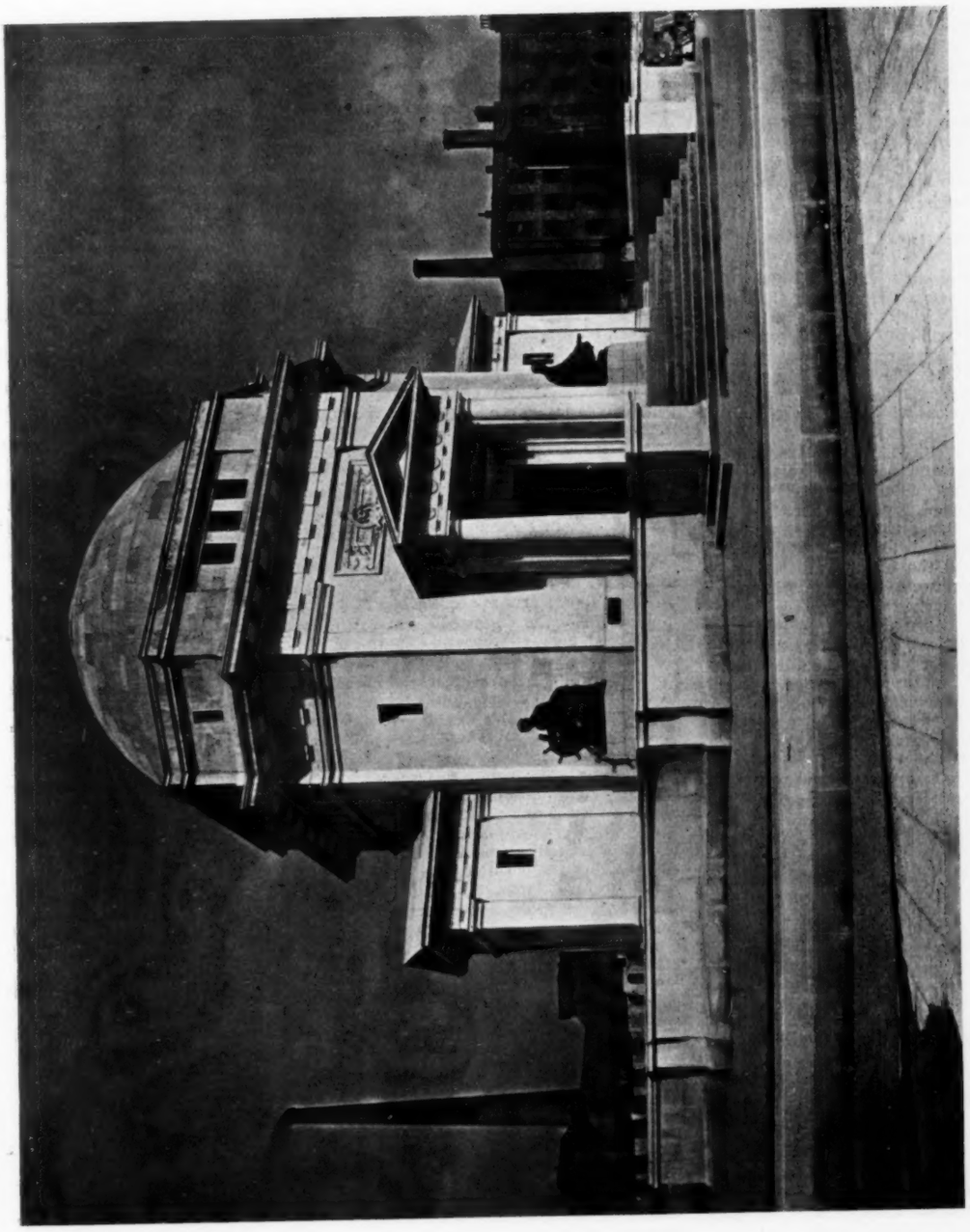
Before dealing specifically with the labour problem in the building trade, it seems only fair to state the different views held upon the question of wages generally. There is a belief, stoutly maintained by a section of the press, that high wages produce prosperity and increase the purchasing power of the mass of the people This belief carries with it the conviction that those who believe that prosperity can be secured by lowering wages and lengthening hours are believers in an archaic and antiquated doctrine. It would seem to be almost impossible to reconcile the two apparently opposing views. In point of fact they mean much the same thing; the differences are the result of stating half-truths. If the fundamental truths were really opposed, one would be forced to the conclusion that what is termed the science of economics was merely a matter of opinion.

There seems to be a general reluctance to define what is meant by high wages or *real* wages. Every standard of wages must be judged in relation to the standard of living, and unless high wages can be measured in terms of production the end is misery for every one. The present day wage basis is comparatively high, yet there are over a million unemployed. If the advocates of high wages were correct in their theory, it might be assumed that a further increase in wages would bring prosperity. Probably they take it for granted that high wages would be balanced by increased output, but by failing to mention this important but unpopular half of their theory, they are responsible for creating an outlook upon wages and service which is reflected in the present state of industry. The advocates of lower wages (or increased production, which amounts to the same thing) can claim that their belief is founded upon a sound economic law which, it is interesting to note, runs parallel with a true conception of social service.

The obligation to work is imperative, but it is not a fundamental law that we are certain of employment on our own conditions. Upon these two rocks industrialism is split, and remains in this position while the main issue of wages and production is being determined. This interlude upon economics has no bearing on the present position of the building trade unless it is realised that this position cannot be regarded as permanent.

In a letter to *The Times* Mr. Ernest Lesser comments upon the "extraordinary fact that at a time when the country is crying out for houses, and still more houses, there should still be close on 100,000 men unemployed in the building trade. Even at the end of last July the total number of insured workpeople in the industry returned as unemployed amounted to 59,226, or approximately 8.2 per cent.—and this at a time of year when, owing to favourable weather conditions, employment would presumably be at high-water mark.

"In September the corresponding figures were 64,074, or 8.9 per cent., and in November 84,574, or 11.2 per cent. Surely these returns point to a state of things almost grotesque in its anomaly and calling loudly for further investigation. They are not to be explained away by talk of 'seasonal fluctuations' or by Miss Halford's ingenious suggestion that they may be partly due to the very shortage of houses, which tends, *inter alia*, to immobilise the labour that might otherwise be utilised to remedy the shortage."



Birmingham Hall of Memory.

MESSRS. COOKE & TWIST, FF.R.I.B.A., Architects.

SOCIETIES AND INSTITUTIONS

NORTHERN ARCHITECTURAL ASSOCIATION.

Annual Dinner.

THE annual dinner of this Association was held at Newcastle on Friday, January 29. The chair was occupied by Lieut.-Col. G. Reavell, O.B.E., F.R.I.B.A., President, who, in proposing the toast, "Our Municipal Corporations," said a great problem was presented to their governing body in dealing with the large mass of traffic which would be created by the new bridge. They had considered that problem, even co-opting three members of that association, and they had eventually decided on the scheme which, by public vote, had been defeated that day. He wished that every voting paper had been headed: "Opportunities missed are seldom recalled," and could only hope that Newcastle would one day rise to its opportunities. The new street would have been a permanent asset for Newcastle.

Councillor W. Vincent Longfield (Deputy-Lord Mayor) said they had spent months of strenuous work on schemes that had been turned down. He feared that cutting out the new street would submit them to a penalty of at least £50,000 a year. The upper part of the new street would have been a shopping centre equal to Northumberland-street in the course of time, and the sites would soon have doubled in value.

The toast of "The Royal Institute of British Architects and Allied Societies" was proposed by Major Robert Temperley, M.A. (Chairman of Council, Newcastle Society), who expressed his pleasure that great educational bodies were prepared to co-operate in endeavouring to find the best way not only to produce good architects but also to educate public opinion as to taste in architecture.

Major Dosser (President, York and East Yorkshire Society of Architects), replying, said that co-operation between the allied societies was valuable in the direction of unity of practice and professional conduct.

Mr. Ian MacAlister said they would undoubtedly be disappointed with regard to that day's news, but he was convinced that a great city like Newcastle was not going to sit down for ever under what had happened.

"Our Guests" was proposed by Mr. W. T. Jones, F.S.A., F.R.I.B.A. (ex-President, N.A.A.), and responded to by Mr. William Hall (President, Northern Counties Federation of Building Trade Employers).

SHEFFIELD, SOUTH YORKSHIRE AND DISTRICT SOCIETY OF ARCHITECTS AND SURVEYORS.

Reading a paper on Reinforced Concrete before the Sheffield, South Yorkshire and District Society of Architects and Surveyors, Professor F. C. Lea, D.Sc., M.Inst.C.E., M.I.Mech.E., Dean of the Faculty of Engineering in the University, Sheffield, said that experiment and theoretical analysis had been of the greatest importance in the development of the use of reinforced concrete, and it was only when the results of these experiments were strictly applied and the teaching of theory rigidly adhered to that successful work could be accomplished. Failures occurred when by carelessness or ignorance these were departed from. Quite recently he had seen a building in which a clerk of the works allowed steel to be put in to form a reinforced concrete floor entirely without any consideration of the real conditions to be met by the steel.

Proceeding, the lecturer said that generally it could be said that if the temperature of the materials was well below freezing, ordinary cement could not hydrate, but when the temperature rose to well above freezing the cement would hydrate and concrete harden. If, therefore, forms were not removed until the temperature had risen and sufficient time was then given, concrete would set. If work was urgent the materials should be heated when the weather was cold.

Having described the characteristics of steel and cement, the lecturer, referring to sand and aggregate, said that good concrete could not be made unless the sand and aggregate were reasonably graded and the material was clean. He had tested concrete made of stone from that district, every piece of which was covered with fine dust, which gave at seven days a crushing strength of less than 600 lb. per square inch. After thorough washing, concrete of the same aggregate had a strength of 1,800 lb. per square inch at seven days.

Clayey material in the sand and aggregate surrounded the hard material with a film and prevented the adhesion. Very simple tests would frequently show the presence of impurities that prevented setting or adhesion, but if there was any doubt proper tests should be made, especially for structural work. Recently the author was concerned with a large building. On the site were sand and gravel and the owner was naturally anxious to use these materials for concrete. Simple tests showed a good deal of clay, while blocks tested at seven days showed a strength only of 500 lb. per square inch. With sand and gravel taken from a somewhat similar deposit, twice washed, a 4 : 2 : 1 concrete could be obtained having a strength of 2,500 lb. per square inch at twenty-eight days. Certain salts delayed setting. For example, three per cent. of zinc carbonate in an aggregate, as shown by J. E. Worsdale, B.Sc., prevented concrete from setting for several weeks, although after six months the concrete had a strength of 85 per cent. of concrete made of a clean aggregate. Good concrete could not be made without the greatest care in choosing and testing regularly the aggregate.

The water content of concrete was very important, and the author thought it was well worth while determining by the slump or jigger table method the consistency for given jobs. Contractors must not add any quantity of water they liked. With machine-made concrete there was no difficulty in gauging the water accurately, and there was no difficulty in working concrete of a consistency that would give practically maximum strength. There was always the danger of concrete being worked in too sloppy a condition; the concrete was weaker and more cement was washed out through joints in the forms. Almost any clean water, including sea water, would make good concrete. Peaty water from a clayey foundation filtered; to take out the clay made good concrete and the cement set perfectly hard. Concrete made of the same water without filtering would not set for many weeks.

The principles that determined the proper placing of steel in the concrete were now well understood for most forms of structure. Steel could be used to take the tensile stresses in simple beams, and slabs and compression steel could be used to strengthen beams. All tension steel elements should be hooked at the ends, and where "joints" had to be made sufficient overlap must be allowed. The concrete must be so made and so moulded round the steel that there was perfect adhesion. It was of importance to recognise that neither concrete nor steel followed Hooke's law to failure, and that by assuming elastic conditions in calculations for the safe working load for a beam and assuming that the working stress was some given value, it by no means followed that the real factor of safety was given by the crushing stress of the concrete divided by the working stress. Nevertheless, the crushing strength of the concrete and the stress used in calculating the safe load were valuable as guides and as giving an arbitrary factor of safety. Under this limitation calculations should be carefully made, steel and concrete arranged to take the necessary tensile, shear and compressive stresses, and when the designs had been carefully made steel sheets showing the details of every bar and how it should be bent and placed should be prepared. No clerk of works, or workman, should be allowed any discretion in placing steel, but must rigidly adhere to instructions on the drawing sheets. This was of the greatest importance, particularly in connection with continuous beams, slabs and T-beams. With simple beams there was not much opportunity to make mistakes.

Expansion steel should be arranged in flat surfaces to prevent cracking during setting, and particularly if these surfaces were likely to be exposed to changes of temperature.

An exhibition of R.I.B.A. prize drawings for 1925 was held at Sheffield University recently, under the auspices of the Sheffield, South Yorkshire and District Society of Architects and Surveyors. A striking example in the exhibition was the design for a cemetery chapel by Miss Leonora F. M. Payne. This work, along with several examples of historic ornament, gained for Miss Payne the "Owen Jones Scholarship." Another arresting work was Mr. F. E. Bennett's "Alfred Bossom" design for a general store in Deansgate, Manchester. Measured drawings of the Pantheon, Paris, which gained the R.I.B.A. silver medal for Mr. Richard W. Briggs, were shown, as well as a set of measured drawings of a Venetian church by Mr. J. Antonia Coia.

NORFOLK AND NORWICH ASSOCIATION OF ARCHITECTS.

The annual meeting of the Norfolk and Norwich Association of Architects was held at the Curats House, The Walk, Norwich, on January 29, when the annual report and balance sheet were adopted.

The following were elected officers and members of council for 1926: President, E. T. Boardman, F.R.I.B.A.; Vice-Presidents, S. J. Wearing, A.R.I.B.A., and J. Page, B.A., A.R.I.B.A.; Hon. Secretary, E. W. B. Scott, A.R.I.B.A.; Council members, E. H. Buckingham, A.R.I.B.A., C. Upcher, and J. Owen Bond, Lic.R.I.B.A.; Associate member of Council, C. L. Lister; Honorary Auditor, E. J. Tench, F.R.I.B.A. Prizes awarded for drawings and sketches were presented to E. C. Scott, C. J. Messent, and J. R. Palmer.

MANCHESTER UNIVERSITY.

Mr. Howard Robertson, F.R.I.B.A., Principal of the Architectural Association, lectured last week at the Manchester University on "Recent Architectural Tendencies in Europe." The lecture was one of the series on the "Art of Building," arranged by the Institute of Builders, the Manchester Society of Architects, and the Royal Manchester Institution. Mr. Robertson ranged, in the course of his lecture, over most European countries, omitting Sweden and Denmark, which had recently been dealt with. The main point which Mr. Robertson made, and which the slides he showed emphasised, was that shortage of money had led to a post-war architecture stripped of redundancy, free from the superfluous, and aiming at fulfilling its function with more thought for fitness than for frills. The slides showed, prevalent throughout Europe, an architecture not breaking with tradition through sheer wilfulness, but seeking to modify tradition to something more in conformity with the new age.

NORTH STAFFORDSHIRE ARCHITECTURAL ASSOCIATION.

Mr. Robert Atkinson, in the course of a lecture at Hanley last week, before the North Staffordshire Architectural Association, said that, following the remarkable progress since the war, the next ten or twelve years would be as revolutionary as the period 1830-1840, which immediately followed the introduction of machinery and steam.

EDINBURGH A.A.

On Monday evening last, at the Rooms of the Edinburgh Architectural Association, Mr. T. S. Bowman delivering a lecture to the Associate Section on "Architectural Metal-work," described the gradual development of the use of metal from the ancient Egyptian period to modern times, showing with the help of slides that much beautiful work was executed in early and mediæval days in spite of very primitive methods.

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ILLUSTRATIONS

The Gresham Hotel, Dublin.

The Gresham Hotel was one of the buildings destroyed during the 1919 disturbances. It is now being rebuilt and enlarged and greatly improved. The total accommodation provided will eventually be 250 bedrooms, a proportion of which will have bathrooms *en suite*. The site is in Upper Sackville-street (now known as Upper O'Connell-street), and is almost ideal for its purpose. The present contract is for the front portion of the building and about half of the central wing. Immediately this is completed the second half will be proceeded with. Certain slight modifications of the plans, as published, are being made as the work proceeds, and in addition to the present accommodation a large garage, entered from the rear street, is being incorporated. An important part of the scheme is a large ballroom and reception rooms for private banquets, weddings, &c. These are so arranged that they can be used independently of the hotel. The scheme is part of a complete scheme for the rebuilding of this part of Sackville-street which has been approved by the local authorities and the Institute of Architects of Ireland; the rest of the frontages will conform. The front of the hotel is entirely of Portland stone, with metal windows throughout, and the roof is of coloured pantiles. The contractors are Messrs. McLaughlin & Harvey, Ltd., of Dublin, and the steel contractors Messrs. Lambourne & Co., Manchester. Dr. Oscar Faber is the consulting engineer.

Headquarters for the Clare West Riding Police Division at Harrogate.

This building will provide the following accommodation: — Superintendent's office; charge office; detectives' office; cells; accommodation for unmarried constables, with mess-room, baths and lavatories; parade room; garage and motor-cycle accommodation; and houses for the superintendent and four officers. The buildings will be erected in multi-coloured brick with red quoins, and the ground floor of the office block and dressings generally will be of a warm grey sandstone, and the roofs will be covered with brindle tiles. The contract for this work has not yet been let. The design is by Mr. P. O. Platts, A.R.I.B.A.

The Restoration of Shrewsbury Castle.

Through the generosity of the Shropshire Horticultural Society Shrewsbury Castle property was, in 1924, acquired from Lord Barnard by the Corporation. After restoration, by the Corporation, under the guidance of Sir Charles Nicholson, the building was opened for public use on January 21. The Castle has been restored as nearly as possible to its Edwardian condition. The internal domestic arrangements of the eighteenth century have been practically entirely removed, though as an example of domestic decoration of this date worthy of admiration the octagonal room in the West Tower (Mayor's retiring room) and the room underneath this at basement level have been preserved. The following features in the building as now restored may be particularly noted:—The Great Hall (Council Chamber) at first floor level is approached through a doorway at this level in the position of the original doorway at the south-east end of the building, the remains of which were discovered during restoration. The Hall itself now forms one chamber open to the fine seventeenth-century timber roof, the attic floor having been removed. The six square stone-mullioned windows of this date at original attic level are also disclosed. The heavy timber-framed screen originally dividing the chamber into two halves is now placed somewhat further eastward, thus supporting the East Gallery, and forming the vestibule. Remains of an ancient fireplace having been discovered during restoration at the west end of the chamber; this fireplace has been restored. Adjoining the chamber at the west end (near the Mayor's dais) is the Octagon Room in the West Tower, which has been preserved as altered and decorated by Telford. Over this room is the West Tower Room, partially restored to its mediæval condition prior to the acquisition of the property by the Corporation. This room exhibits remains of a groined roof of fourteenth-century date. The approach to this room from the ground floor is by a narrow stone staircase in the thickness of the wall. The corresponding rooms in the East Tower (adjoining the vestibule) have now also been partially restored to their mediæval condition.

Saddleworth Police Station.

This building, which is in course of erection, provides accommodation as follows:—Inspector's office; charge office; cells; two courts; magistrates' retiring room; solicitors' room; lavatories, &c. A house for the inspector is attached. The building will be faced with hammer-dressed wallstones from Cullingworth, with dressings from Crossland Moor Quarries. The back elevation will be faced with brick and the roofs will be covered with Precelly rustic slates. The following is a list of the contractors:—Messrs. Holroyd, Brook and Eaglands, Ltd., Slaithwaite, builders; Messrs. B. & J. Smiths' Nephews, Oldham, joiners; Messrs. J. & J. Rushton & Sons, Bacup, slaters; Messrs, A. Higginbotham & Sons, Idle, Bradford, plumbers; Mr. F. Sowerby, Bishop Auckland, plasterer. Mr. P. O. Platts, A.R.I.B.A., is the architect.

Interior Decorative Woodwork.

The interiors reproduced on page 236 illustrate the decorative possibilities of woods from British Columbia, some description of which is given in an article on page 246.

Birmingham Hall of Memory.

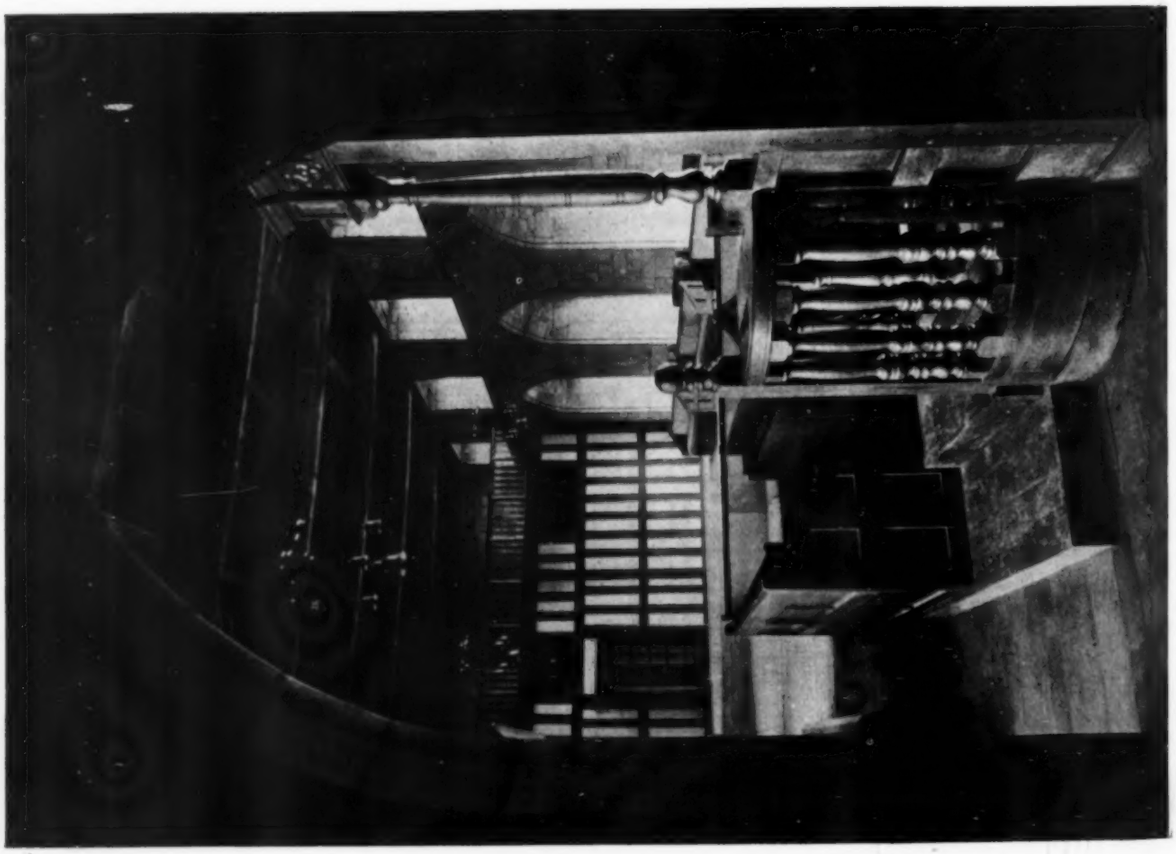
We give this week an illustration of Birmingham's "Hall of Memory" War Memorial, which has just been completed from the designs of Messrs. Cooke & Twist, FF.R.I.B.A., who were the successful architects in a competition held some time ago. It is built of Portland stone, set and pointed in non-staining "Atlas White" Portland cement mortar.

New Court House at Rotherham.

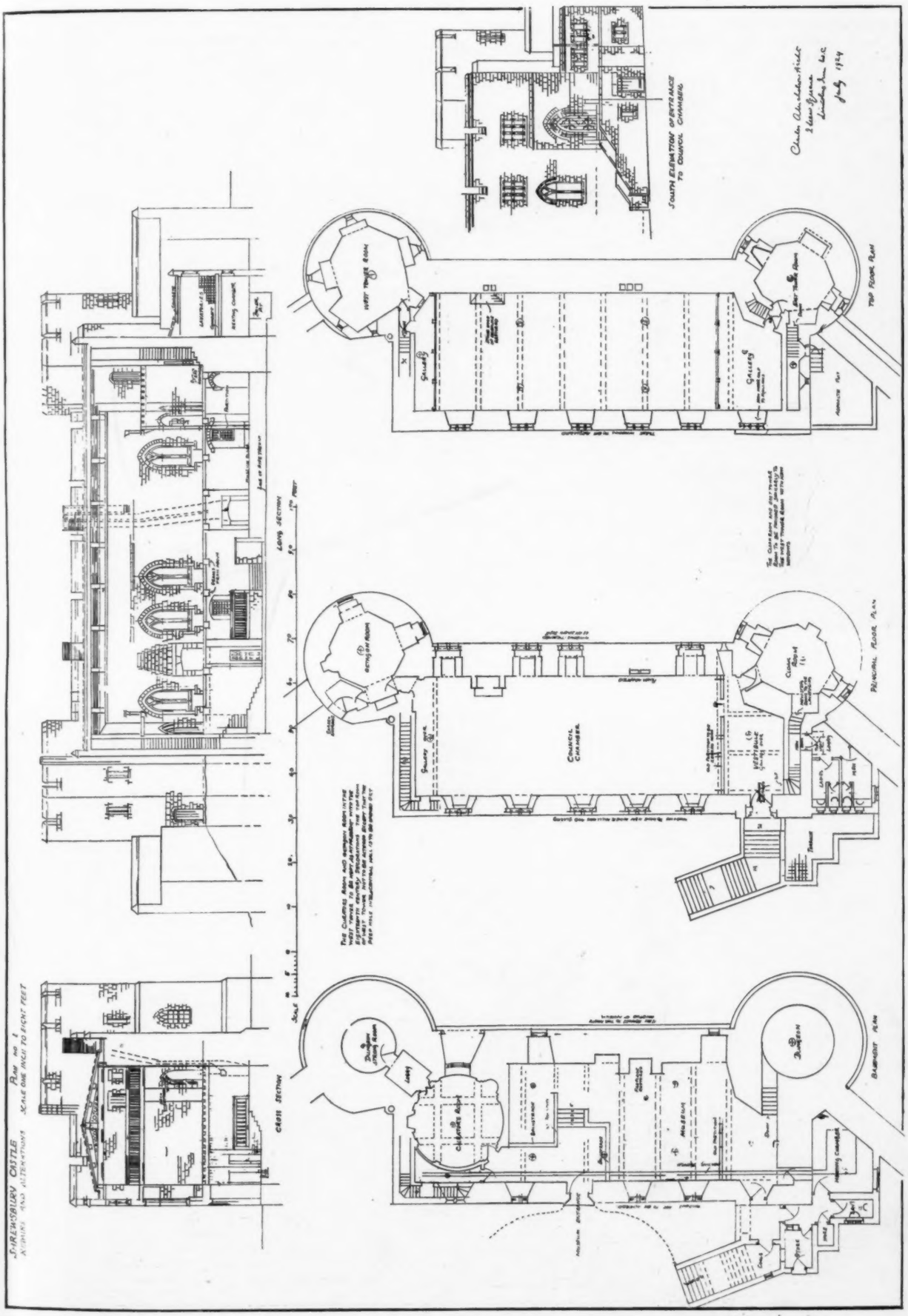
This building is to be erected on the present Cattle Market site and will include the following accommodation: — Superintendent's office; charge office; detectives' office; parade room; cells; two courts with magistrate's retiring rooms; magistrates' clerk's offices; solicitors' retiring room; waiting rooms for witnesses; lavatories, &c. The building is flanked on one side by the Superintendent's house and on the other by a house for the orderly. The principal elevation will be faced with stone and part of the side and back elevations will be faced with pressed brick with stone dressings. The whole of the floors to courts and offices will be in reinforced concrete. The roofs will be covered with green slates. Mr. P. O. Platts, A.R.I.B.A., is the architect.

The Gresham Hotel, Dublin: Longitudinal Section.

MR. ROBERT ATKINSON, F.R.I.B.A., Architect.



Restoration and Remodelling of Shrewsbury Castle: The Council Chamber. SIR CHARLES NICHOLSON, Architect.



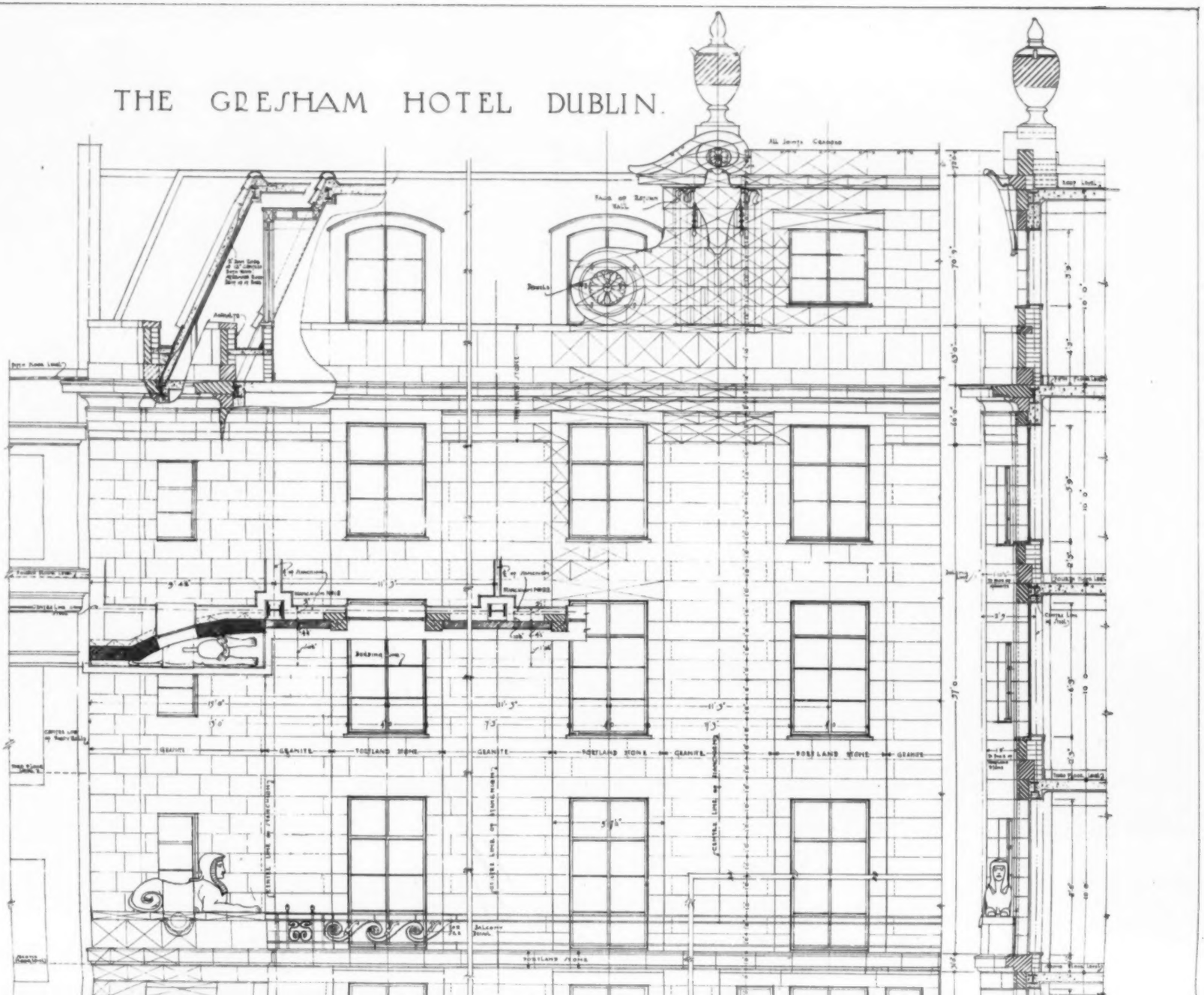
Restoration and Remodelling of Shrewsbury Castle: Plans, Elevations, and Sections.

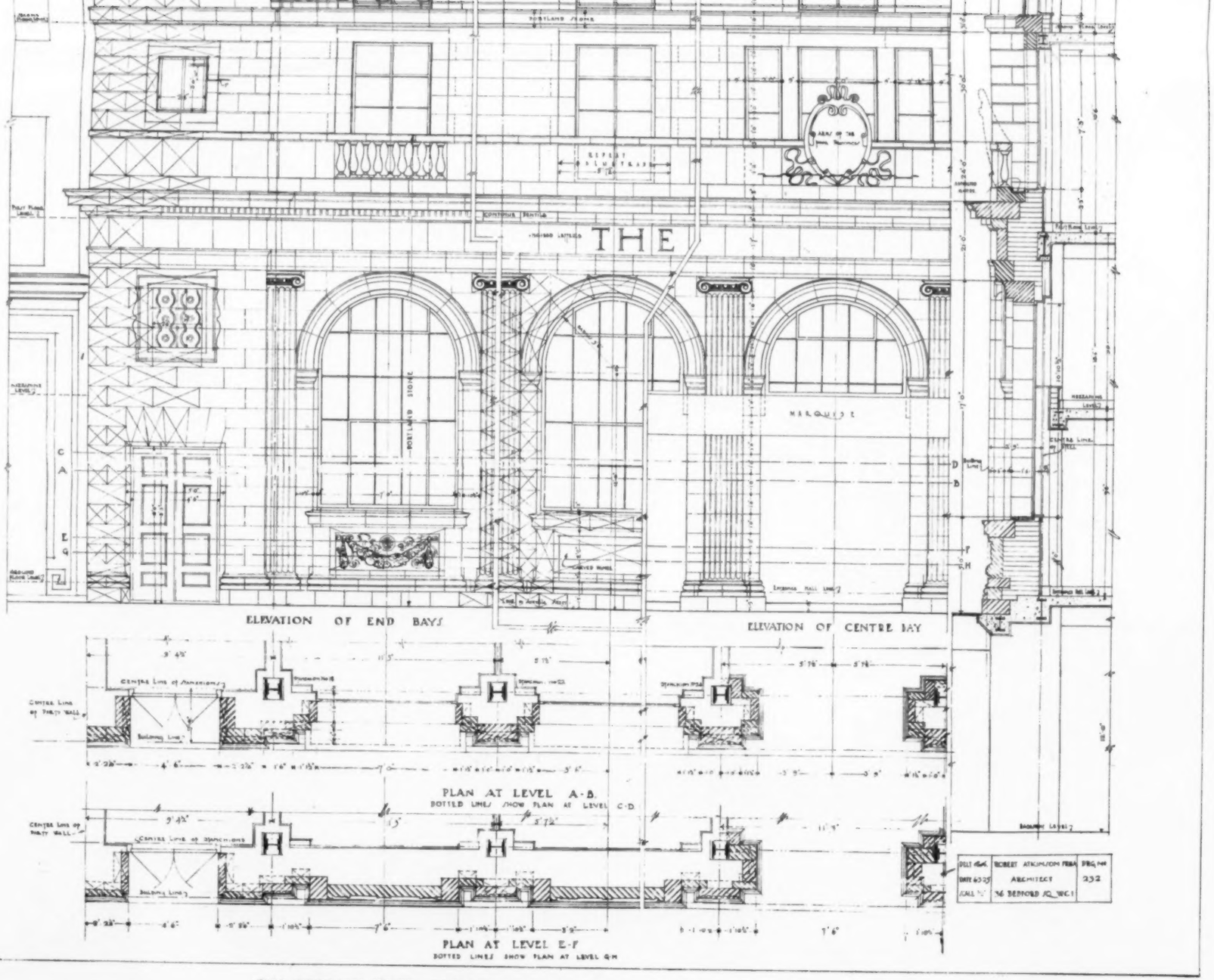
SIR CHARLES NICHOLSON, Architect.

Proposed New Headquarters for the West Riding Police, Claro Division.

Mr. P. O. PLATTS, A.R.I.B.A., West Riding Architect.

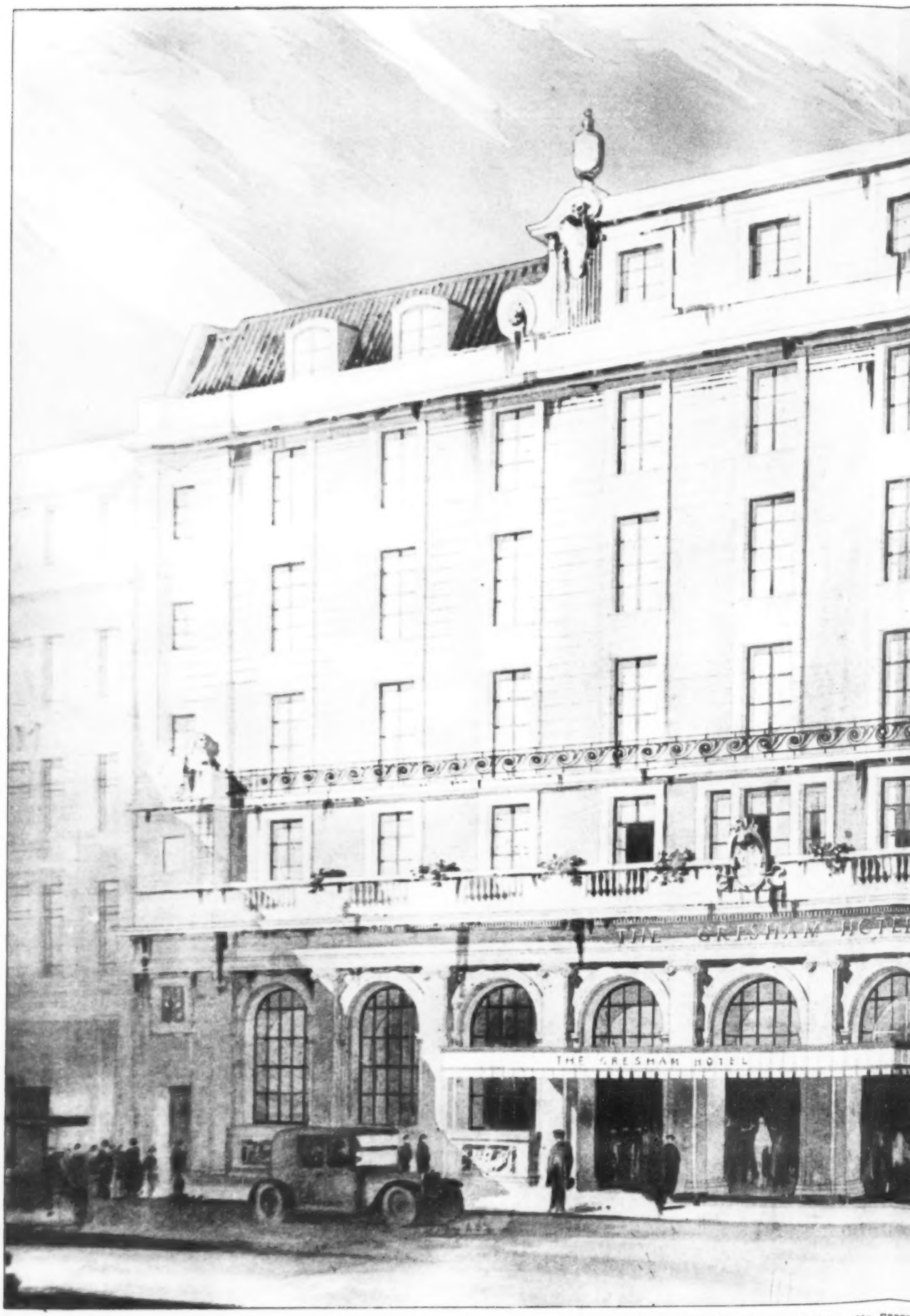
THE GRESHAM HOTEL DUBLIN.



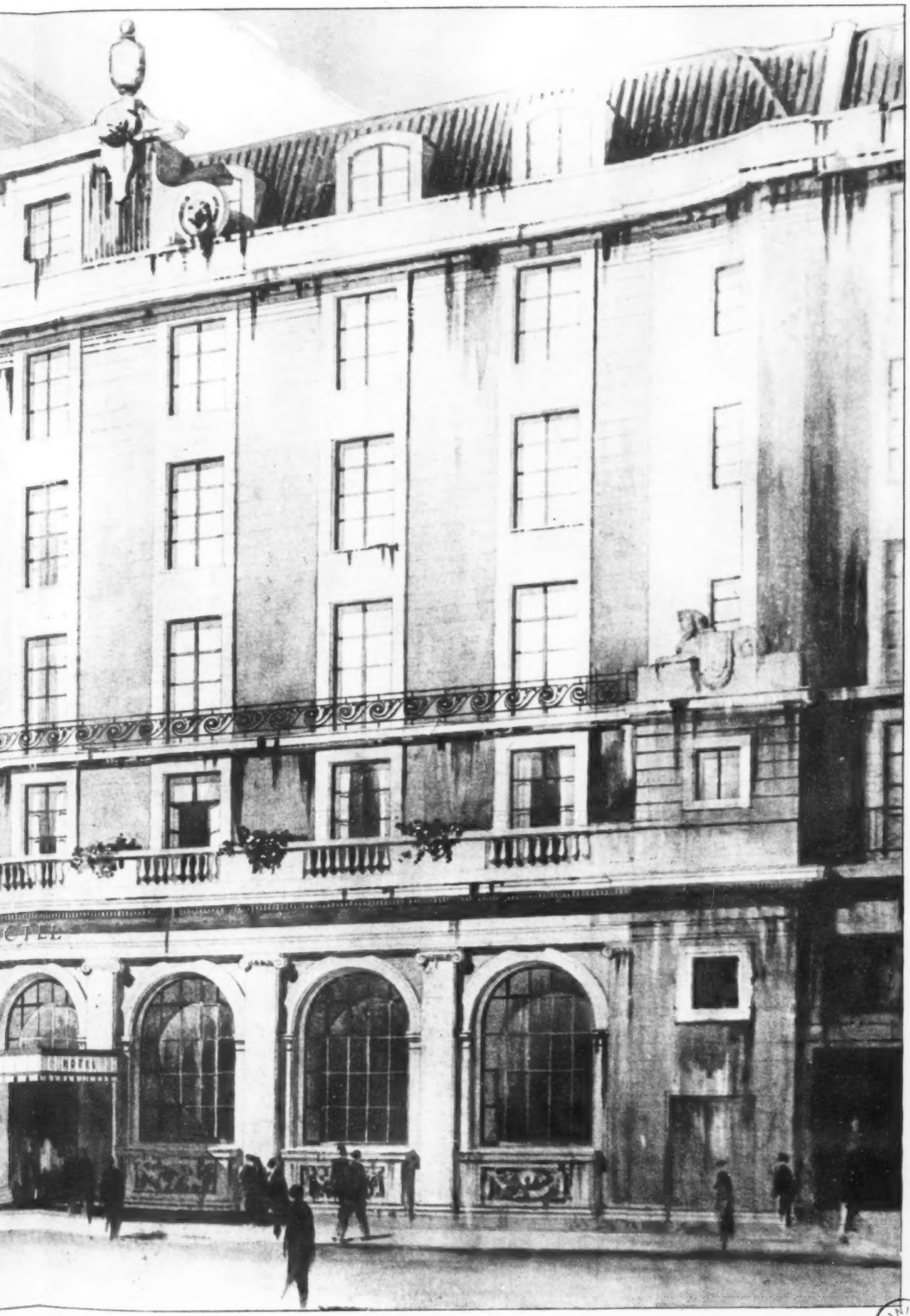


THE GRESHAM HOTEL, DUBLIN. MR. ROBERT ATKINSON, F.R.I.B.A., ARCHITECT.

UNIV. OF MICH.

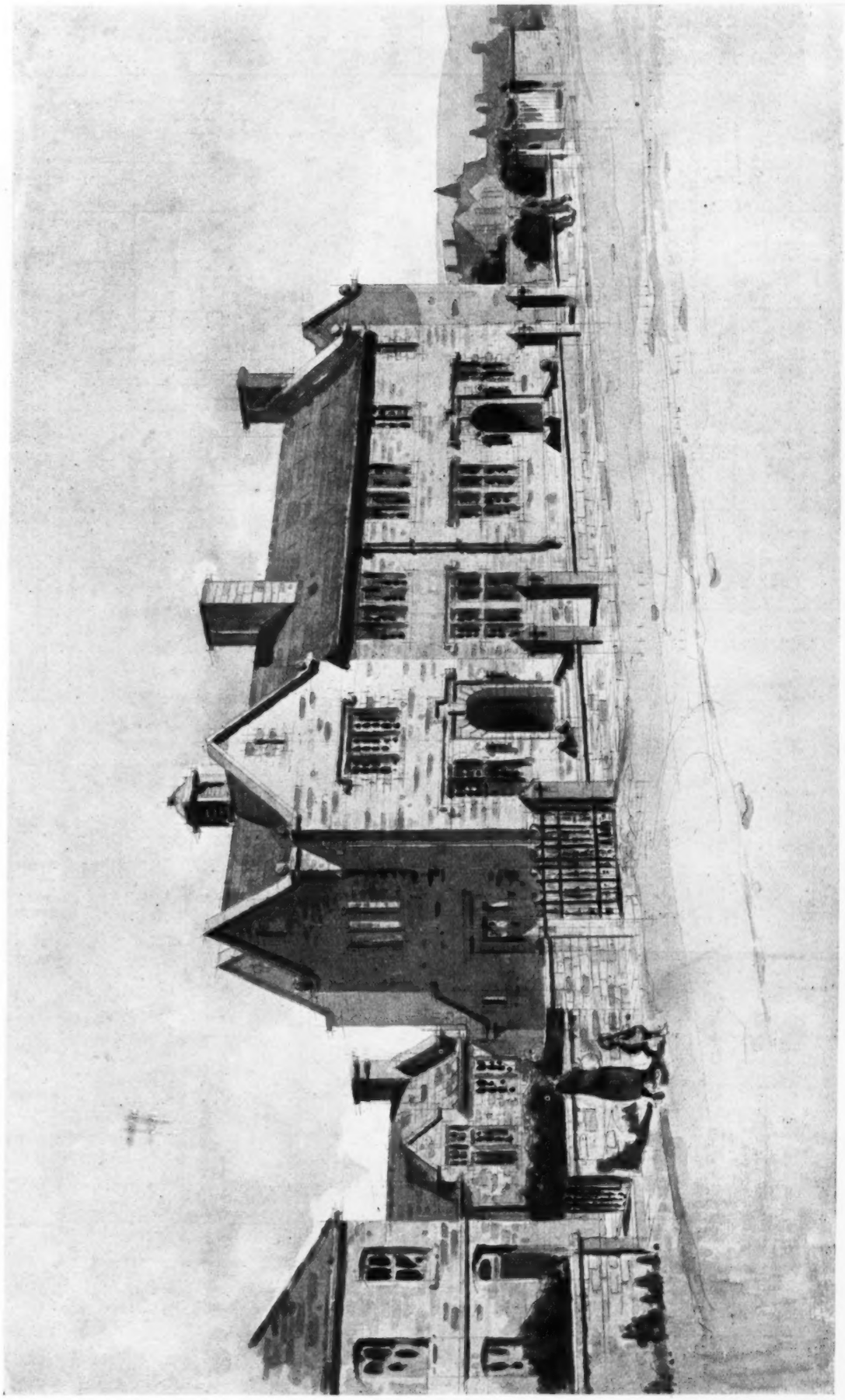


THE GRESHAM HOTEL, DUBLIN. Mr. Rober



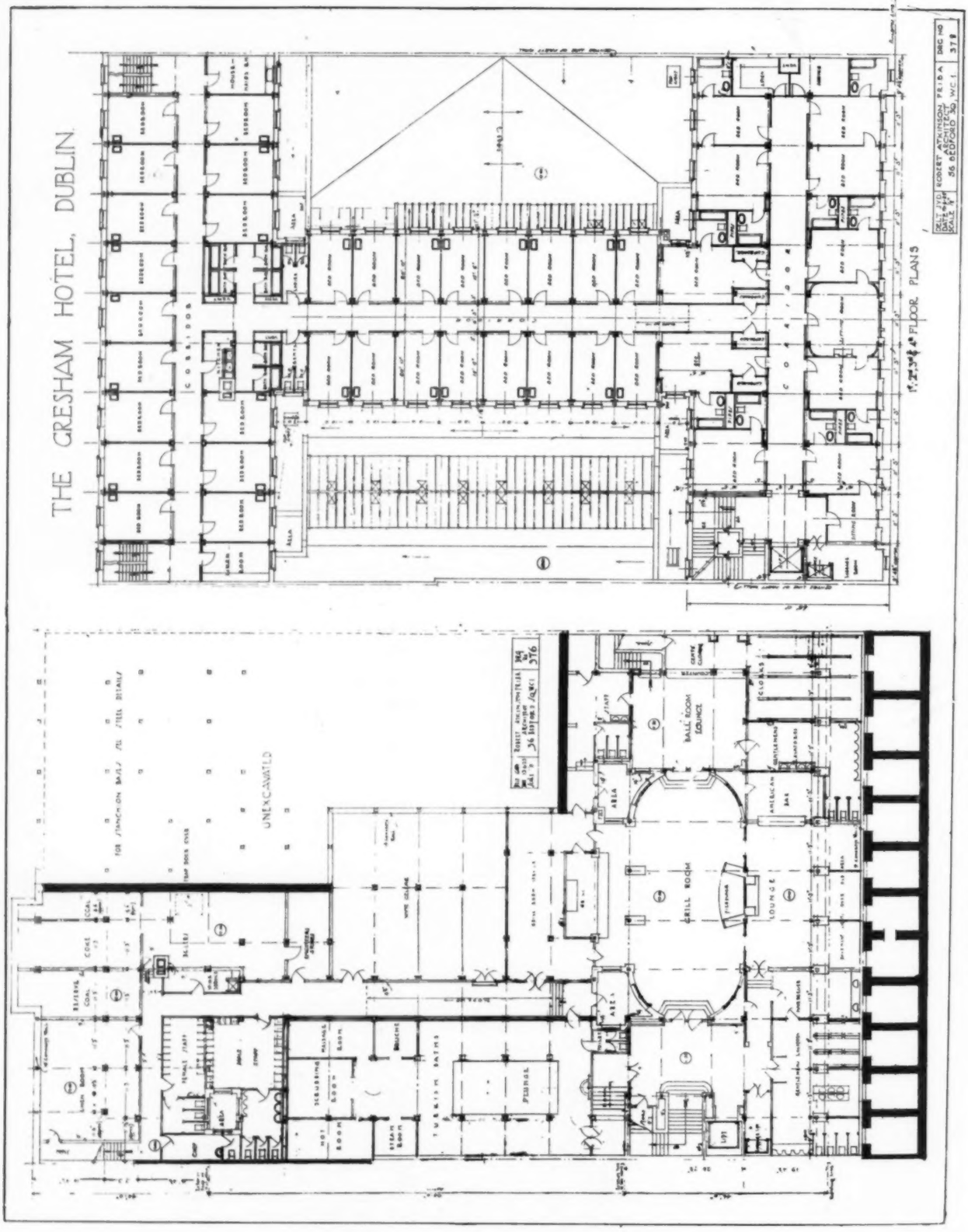
MR. ROBERT ATKINSON, F.R.I.B.A., ARCHITECT.

UNIV. OF MICH.



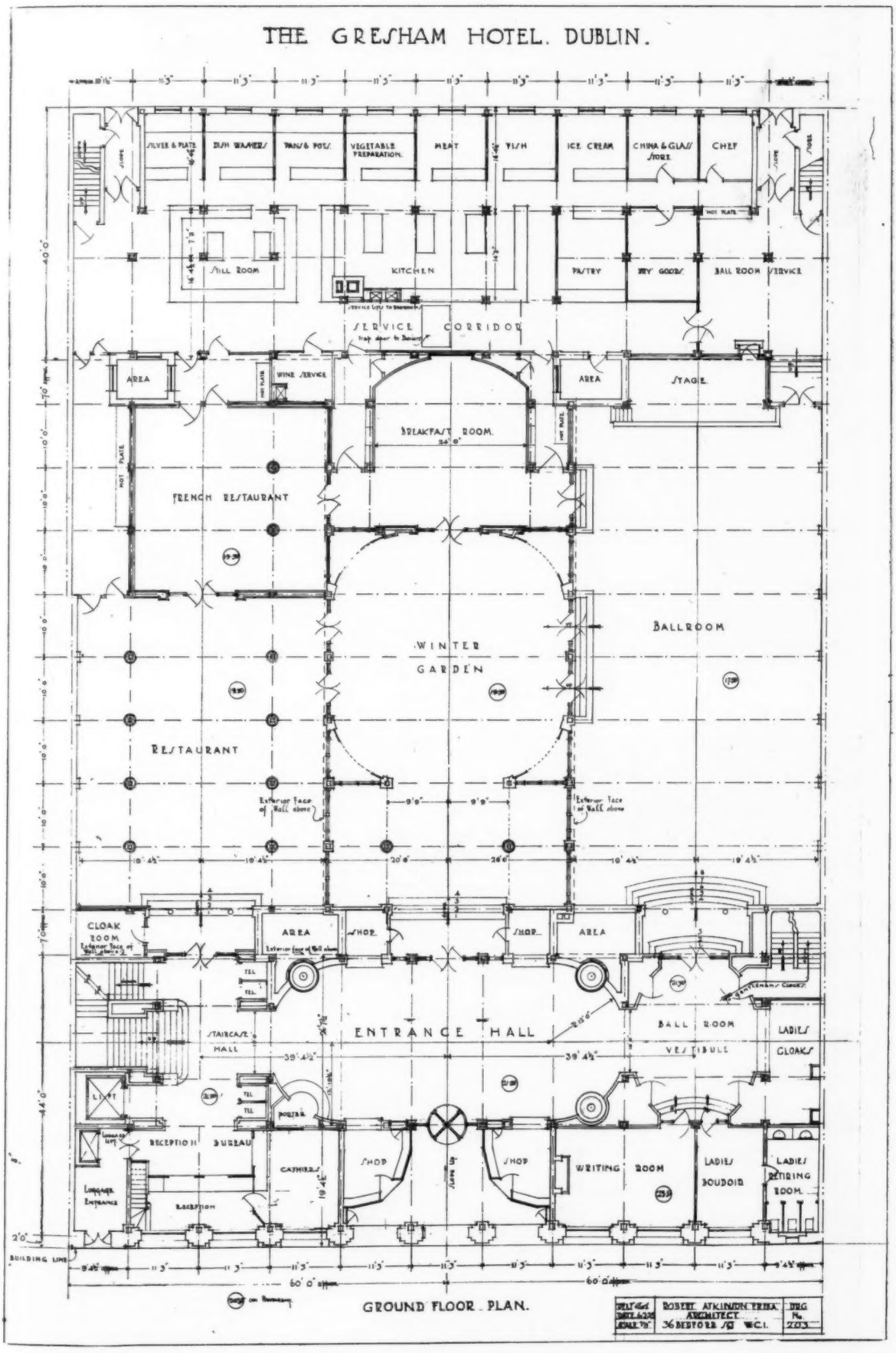
Proposed Police Station, Saddleworth.

MR. P. O. PLATTS, A.R.I.B.A., Architect.



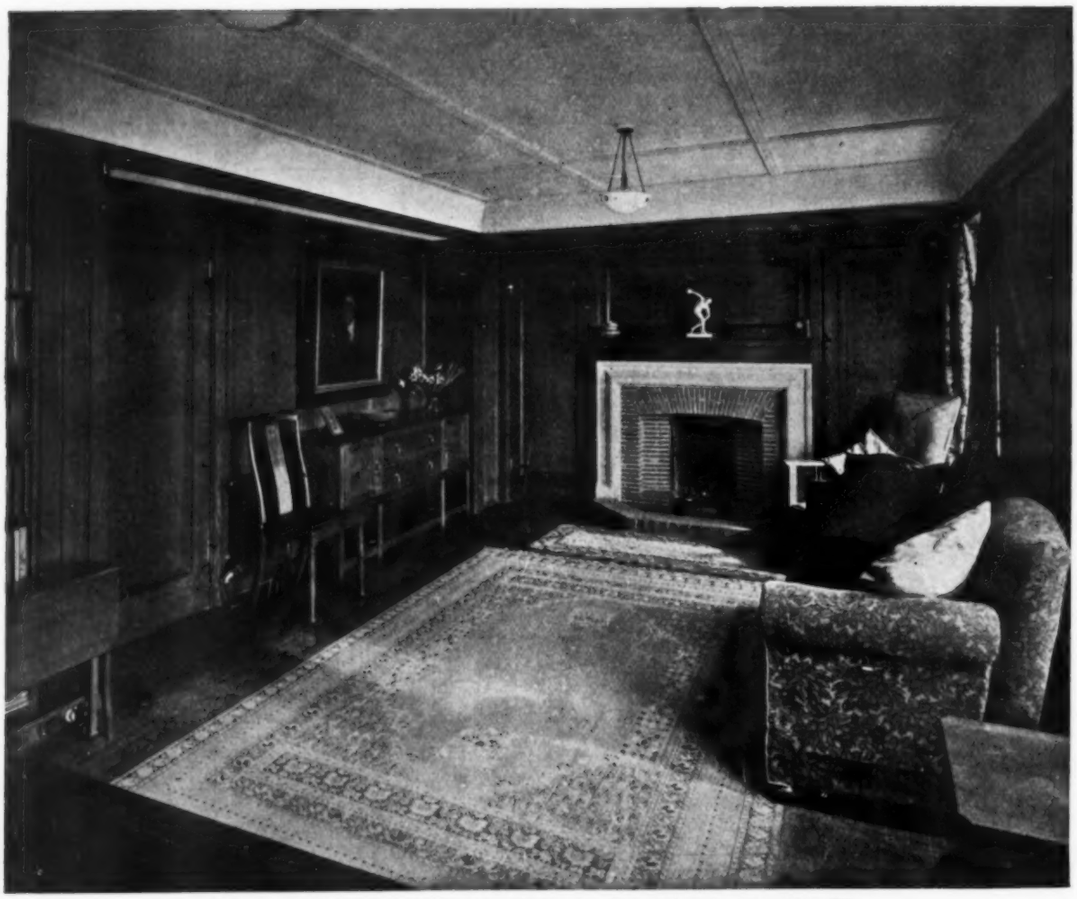
The Gresham Hotel, Dublin: Basement and First, Second, Third and Fourth Floor Plans.

MR. ROBERT ATKINSON, F.R.I.B.A., Architect.



The Gresham Hotel, Dublin: Ground Floor Plan.

MR. ROBERT ATKINSON, F.R.I.B.A., Architect.



House at Hampstead Garden Suburb: Panelling in Douglas Fir.
MR. PAUL BADCOCK, A.R.I.B.A., Architect.

The 1925 Room, Palace of Arts, Wembley: Ceiling, Wall Panelling and Fittings in Western Hemlock.
SIR JOHN SIMPSON AND MR. MAXWELL AYRTON, P.P. and F.R.I.B.A., Architects. (*See p.* 246).

FIG. 1.

BRITISH TOMBS: ANCIENT AND MODERN

BY W. R. LETHABY.

II—The Great Anglian Crosses.

IT had been intended that these three or four papers on British traditions of tomb making should be general and, if possible, suggestive to modern tomb makers. The suggestions here will only be to the spirit in telling of the depth and humanity of the old memorials of our land, for in trying to describe the great crosses of the seventh and eighth centuries, I am half unwillingly drawn into archæology. The Bewcastle, Ruthwell, and Hexham crosses are not only wonderful native works, but they are the most interesting from an international point of view of all the monuments in Britain, with the possible exception of Stonehenge, and they have attracted the attention of Strzygowski, Rivoira, Bronsted, and other students of European art. Still, outside a narrow circle of specialists, they are almost unknown to ourselves. Fig. 1 is the west front of the Ruthwell Cross.

There has long been an excellent cast of the Ruthwell Cross at the Victoria and Albert Museum, and another of the Bewcastle Monument has been added more lately. These I have studied again and again during the last twenty-five years until, if I may say so, I can take them about in my mind and carry them to bed with me, and I would recommend making stone friends as a pleasant modern habit.*

Here I hope to recapitulate only just enough to hold these notes together, but I want, rather, to deal with some general questions, such as the iconographical meaning of the sculptures and a possible reference on the crosses to the old Teutonic World-tree.

The Cross Standard.—The Bewcastle Cross is in Cumberland, and the place seems to have been a station on a Roman road. It bears an inscription in runes that begins: *This sig- beacon thin . . .*, which seems to mean: "This slender Victory standard"; and it goes on to say that it was set up to commemorate Alchfrith (sub-King of Deira) and son of Oswy. The date, if the inscription is rightly deciphered—and after long discussion this is now generally agreed—would be A.D. 670.

The Cross seems to have been recommended to our warrior ancestors as a talisman of Victory, for did not the Vision of Constantine and what followed prove this? Bede records that King Oswald set up the *signum* of the cross at the battle of Heavenfield in 635. In the inscription above quoted *beacon* stands for *signum*, or standard.†

In the wonderful ancient poem *The Dream of the Rood*, which may have been composed by Cædmon, and the heart of which, amounting to some forty lines, was inscribed in runes on the Ruthwell Cross, the word "beacon" is again used for the cross seen in the sky, and warlike imagery appears in other parts of the poem, as, for instance, where Christ mounts the rood as a young warrior. It has been argued whether this deep and passionate poem, to me the most moving thing in the English language, is indeed by Cædmon, and on this I have ventured to make the suggestion that the *dream* form of this very poem is probably the basis for the story told by Bede, which nobody now believes is bare fact, that Cædmon dreamed his poems.

"What! a dream of dreams is now my theme,
'Twas midnight when the vision met my gaze."

World-Tree.—On each of the two narrower sides of the cross-shaft a scroll of foliage, continuous from bottom to top, is carved, with little beasts and birds on the branches. One side is so much like the other that the idea of reversed repetition, or showing two sides of one thing, seems to have been the thought of the carver. On the cross-head itself, on the side towards the east, there was carved an eagle perched on a branch at the apex (Fig. 2). At the bottom of the same cross-head was an archer shooting upward towards the eagle. (A very remarkable bird. Notice how he lifts his powerful right claws—nervously!). On other crosses—

FIG. 2.

FIG. 3.

for instance, a fragment from Sheffield, now in the British Museum—an archer appears at the foot of the main shaft, involved amongst similar scrolls of foliage. In the lowest part of the south side of the Ruthwell Cross I have observed the interlacing coils of a serpent, the head of which comes under the root of the tree (Fig. 3). In all this there is, I believe, an association of ideas between the Cross and the "World-Tree" of our Anglian forefathers. On the Bewcastle Cross, although three sides of the shaft are broken up into several panels containing figures and ornamentation, the east side has a continuous meandering stem of foliage, with little creatures in the turns almost identical with the Ruthwell Cross; here, again, the foliage was doubtless continued on the east side of the cross-head, as at Ruthwell, with the eagle above and archer below. The living things on the main stem of the shaft are described thus: "In each curled branch there rests a bird or an animal devouring the fruit. The two creatures at the top [of the shaft] resemble squirrels with bushy tails over their backs."

In a recent study Sir A. Evans has traced back the roots of the conception of a world-tree to an Eastern source and primitive times ("The Ring of Nestor," *Hellenic Journal*, 1925). He adds some remarks which may help us in interpreting the meaning of our crosses and the thought behind them—"The Ash Yggdrasil in turn influenced Mediæval accounts of the Cross." He quotes from an author (sometimes wrongly supposed to be the great Alcuin, c. 800), who wrote that, the cross contains mysteries, rises to heaven and is fixed below where the earth clings to it. Sir A. Evans proceeded: "The branches of this greatest of all trees stretch over the whole world and shoot upwards to the sky. The eagle and squirrel sit on its branches and four stags on its roots, which are guarded by the loathly serpent Nidhöggr."

In the poem "The Dream of the Rood" "tree" is quite a synonym for cross, but we still say roof-tree and axle-tree, and more need not be implied in the word, yet in the phrases more may, I think, be discerned: ". . . a wondrous tree borne aloft . . . never was tree so bright, gems shone forth therefrom . . . tree of triumph . . . tree of glory . . . tree of victory."

On the Bewcastle Cross the association of the tree and living creatures with the cross was more simply done than at Ruthwell. The front or western side seen by those looking to the East was the Cross proper; the back was the tree with birds and squirrels on its branches. The lost cross-head was probably like that of Ruthwell and had the Lamb surrounded by the four evangelists on the front and the continuation of the tree with archer and eagle at the back.

On the Ruthwell Cross, many more sculptures representing the Gospel story being desired, two

* *Burlington Magazine*, Vols. xxi, xxiii, *Architectural Review*, 1912; *Archæological Journal*, 1913; *Antiquaries Journal*, 1921.

† Skeat says: "Beacon, A.-S. beacen, a sign, signal, standard, also spelt *becn*." (So on cross.)

aspects of the world-tree were carved on the sides of the shaft but they were brought together into one tree-top on the cross-head for the eagle and the archer. In the two separated aspects of the lower part of the tree we find the reason why the archer was put on the cross-head where he could take aim at the old eagle. If he had been at the bottom of the shaft there would have had to be two aspects of him, shooting at nothing which could be seen.

The ornamentation consisting of scrolls of vegetation, with the birds and beasts on the branches became, in the "ornamentation" of the Saxon crosses, the most favourite of all motives, with the possible exception of the

FIG. 4 (Head at bottom separate).

braidings; there was something typical and representative about it.

An example of such ornament in book decoration is given in Fig. 4. This is taken from a book of the Gospels in the Vatican Library, attributed to the eighth century and reproduced in the New Palæographical Society's publications (Series II, pl. 56), together with other most interesting details. Among these are symbols of the Evangelists with human bodies and the heads of several creatures (symbols of this type appear around the Crucifixion of the Sandbach Cross). One detail is a dragonine creature with a frontal head (see Fig. 4 and compare Fig. 3). It is a particularly masterly work, refined and elegant; the "In Principio" page (pl. 59) is extraordinarily fine. The style of the scroll foliage with the little dragons biting the ends is exactly the same as that of several northern stone carvings. It is signed by one of the scribes *Ora pro V Vigbaldo*. I may mention here, as a hint for modern use, the delightful signature form given by Sir Henry Howarth from a northern book and beginning *Ora pro me*

P
ORA
O
M
E

Sculptures.—On the western and eastern faces of the Ruthwell Cross are sculptures relating to Christ and the Church disposed in a series of panels with explanatory inscriptions round about. The most prominent figure on the west face—seen to the east—is a figure of Christ holding a roll and trampling on two swine-like beasts. Above this figure is another of St. John Baptist, and both these are practically repeated at Bewcastle. This chief figure is not so much a "Christ in Glory" as it has been described, but it is the reappearing Christ of the Last Judgment. The fact is attested by the inscription IHS. XPS. AEQVITATIS. This interpretation is made sure by the fact that on the early Irish crosses one face is usually devoted to the Judgment, while the Crucifixion was on the other—and this was the case here. The beasts trodden under foot were symbols of death and hell; they are accompanied here with an inscription filling up the space to the effect that "Beasts and dragons recognised in the desert the Saviour of the world." (Figs. 1 and 5.)

Direc ly over this panel is the figure of St. John Baptist, who holds a disc with a lamb on it—that is, he was saying "Behold the Lamb of God."

Above St. John was the head of the Cross of which only small fragments remain. On one of these—the upper arm—is carved the symbol of St. John Evangelist. Under this carving, as I was able to show, was the symbol of St. Matthew, and from this it followed that the arms of the Cross were occupied by four symbols of the Evangelists.‡ Other crosses have the Lamb in the centre, and this was probably the case here. The Baptist's testimony may refer to this symbol rather than to the Christ figure below him.

Beneath the standing figure of Christ is a sculpture representing SS. Paul and Anthony sharing bread in the desert; this subject stands for the beginning of monasticism, which doubtless to the designer

FIG. 5.

was the greatest fact between the foundation of the Church and the Last Day. Below this panel is a really beautiful relief of the Flight into Egypt. When I drew Fig. 6 I supposed the lamp on the left represented a tree, but it should be smaller and may, I think, be the head of Joseph looking back from a gateway representing the safe asylum of

‡ In the cross as restored the symbol of St. John has been set facing the east, and so not above that of St. Matthew, but over the small figure of an archer.

FIG. 6.

Egypt. The lowest subject on this side was bigger than the rest, but it has been almost wholly destroyed; from the traces which remain, however, I was able to see that it represented the Nativity. At the top of this panel are traces of two animals, ox and ass, then came the Babe, and lower the reclining figure of the Virgin. I have found the subject carved on the Saxon Cross at Sandbach, Cheshire (*c.* 800 ?) where the upper part is perfect, while the lower part is entirely destroyed. The treatment was similar in both cases, and many other parallels might be brought forward. In the foreground—that is, at the bottom, of the Ruthwell panel are traces of the women bathing the new-born infant. (Fig. 7.)

On the other side of the Cross the similar panel at the bottom contains the Crucifixion, one of the earliest examples of large scale which exist. Many later representations on other crosses show that the figures on either side of the Cross were probably the two soldiers. This panel is badly decayed or abraded, so that more than is shown on Fig. 8 cannot be seen.

Over this bottom panel is the Annunciation, a truly beautiful sculpture (Fig. 9). Above this are panels in which the healing of the Blind Man and Mary Magdalene washing the feet of Christ with her tears are represented and over this again is the Visitation. This series of extraordinarily interesting sculptures in the early Christian tradition is very little known, and they still wait to be compared with many of the same cycle on other early monuments in Britain and Ireland. Thus there is another very beautiful Annunciation on an English fragment at Hovingham, and other examples appear on a Cross at Sandbach and a slab at Wirksworth. This Western cycle of early Christian sculpture seems to have

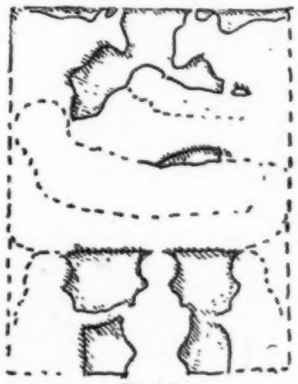


FIG. 7.

preserved traditions like the use of "types" of Christ on the Irish Crosses which were afterwards handed back to Europe. M. Male, in his recent book on Twelfth Century Sculpture, claims that this use of "types" was re-invented

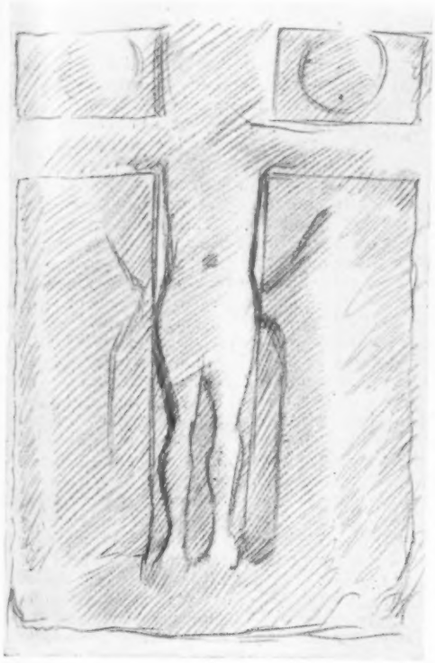


FIG. 8.

by Abbot Suger at St. Denis, but he seems to have overlooked Irish evidence.

The bottom panel of the western face of the Bewcastle Cross contains the standing figure of a man with a falcon on his fist, and this is probably Alchfrith. It is true that Professor Baldwin Brown in his most excellent and trustworthy book on the crosses (1921), prefers to think that it is St. John the Evangelist, and

FIG. 9.

that the carver has treated the symbolical eagle like a falcon. This I cannot believe as in itself a probable possibility, and there are several reasons against it. This panel is divided from the rest of the sculptures by the long memorial inscription to Alchfrith. Again, there are several early coins (sceats), which show a "portrait" figure with a bird on his left hand. St. John the Evangelist was probably on the cross-head, as at Ruthwell. I conclude, therefore, that the figure on the cross is a "portrait" of Alchfrith.§

(To be continued.)

CITY IMPROVEMENT AND REGIONAL PLANNING

Professor P. Abercrombie, F.R.I.B.A., gave an address on "City Improvement and Regional Planning" at a meeting of the Bristol Society of Architects, on January 21st, at the Royal West of England Academy. Amongst those present was Sir John Swaish (Chairman of the Bristol Town Planning Committee).

Mr. R. C. James, F.R.I.B.A. (President), who was in the Chair, said the Society considered the subject was likely to interest, not only architects, but the general public, more especially, perhaps, landowners, and they had therefore decided to throw the meeting open to the public.—he was pleased to welcome such a large audience.

Professor Abercrombie said his object was to try to join up the two ideas of city improvement and regional planning, and to show that they had an intimate and real connection. The tendency in regional schemes was often to concentrate on areas between towns rather than on town in relation to surrounding areas. There was an unreality in preparing elaborate schemes for towns without legislative means of execution, but he was emboldened to speak of city improvement by the fact that the present Minister of Health, Mr. Neville Chamberlain, was shortly to introduce much more extended powers for dealing with cities as they are. He thought there was a clear case for every town to prepare a scheme for central improvement, as well as joining with nearby local authorities for preparing regional plans. All would agree that they were up against great difficulties in preparing large schemes of central improvement, such as questions of cost, compensation for property, and matters of that kind. His contention was that when they were dealing with a region such as that, for instance, in which Bath and Bristol were the two focal points, it was essential that they should think of the future of the two cities and other towns in the region in connection with the development of the countryside around. He would ask them to divest themselves for a moment of any consideration of existing boundaries of authorities, for boundaries could be changed where necessary, and to think of areas on their own merits, from a threefold point of view—(1) of place, (2) of work, and (3) of people. In regard to the first, there were points of topography and geology to be considered. In the past there had been a tendency to ignore these and to build houses where they were most wanted on the spur of the moment. As to the second point, work, they had to consider what were the mainsprings of a town's prosperity. In some there was the residential or health consideration, such as in the case of Bath and Weston-super-Mare. At Chester, for instance, there was a variety of considerations, some of which were in opposition to one another, and it was of importance to think what should be worked for and whether any one element should be suppressed or developed. In Bristol they had an interesting problem in the new docks being further down the river. Did that mean that the industrial element was going to change? Were the factory areas to go up the Avon towards Bath, or go down the Avon in the direction of Avonmouth? What was the best use to which the valley between Bristol and Bath should be put? Should it be industrialised or kept in its beauty for recreational purposes? Then, again, what areas should be given up totally to factories, or did they intend to keep a mixture of factories and houses in certain parts? In the past nearness to work had been the chief consideration governing the position of houses, and in Lancashire they found large mills with groups of houses around them. Since the war a most drastic revolution had come in the means of locomotion, and he thought the motor-'bus was more revolutionary than the locomotive. The tendency, he thought, would be for the population to spread more over the countryside. As the towns were improved and the centres of towns became cleared, there would be a tendency for even the poorer people to get away, and that would mean a new grouping of the population. When large masses of people moved the question was not merely one of moving out to new suburbs, but of moving further afield and forming new dormitory towns. That was a point to be borne in mind in regional planning. What should be guarded against was "ribbon" development—a stretching out along the sides of new roads. That was not only ugly, but uneconomical, and a scattered population was difficult to deal with in regard to drainage, lighting, and other matters. A better method was to take certain centres and develop new towns or villages, and that would require much study in regional planning. Road planning would follow on such fundamental requirements. Road planning should not dictate where people should live, but be ancillary to it. The question of open spaces must be borne in mind, and should not be considered simply from the point of view of a single local authority; and he did not see why certain local authorities should not combine to provide suitable regional open spaces. Finally, it should be seen that suitable civic centres were provided with room for development. Professor Abercrombie referred, in conclusion, to the fact that in the Bristol and Bath district those concerned were working in close co-operation with regard to future development, much closer than in any district with which he was familiar.

A cordial vote of thanks was passed to Professor Abercrombie, on the proposition of Mr. G. C. Lawrence, F.R.I.B.A., and seconded by Mr. L. S. MacKenzie, the City Engineer.

§ The existence of Alchfrith, apart from a later Aldfrid, has even been denied, but on this see Bishop Browne's volume on the crosses (1916). I have found a reference to Alchfrith in the Menology of English Saints, which, I suppose, may be an independent church record.

The British School at Rome.

Lord Esher, presiding at the annual meeting of subscribers to the funds of the British School at Rome, held at Burlington House, said, in moving the adoption of the annual report, that the most important thing that had occurred during 1925 was that the school had become a more compact body. Previously the Faculty of Archæology was not closely incorporated with the other faculties. After Sir Rennell Rodd (formerly British Ambassador in Rome) had seconded, Mr. A. Hamilton Smith (chairman of the Faculty of Archæology, History and Letters), gave, in a paper which he read and illustrated with lantern slides, an account of the history of the school since its foundation, entitled "A Survey of Twenty-five Years." Among others attending were Sir Reginald Blomfield, Sir C. Harcourt-Smith, Mr. G. M. Trevelyan, Sir Arthur Evans, Dr. J. W. Mackail, Mr. G. A. Macmillan, and Mr. W. Russell (treasurer).

Chadwick Lectures.

The 1926 Spring Programme of Chadwick Public Lectures will be initiated in London on Friday, February 26, at 8 p.m., in the Hall of the Institution of Civil Engineers, Great George Street, Westminster, when Dr. H. T. Calvert, of the Ministry of Health, will lecture on "The Activated Sludge Process of Sewage Treatment." On Thursday, March 11, at 8 p.m., Mr. W. A. Harvey, F.R.I.B.A., consulting architect to the Bournville Village Trust, will lecture on "Housing—Past, Present, and Future: Its Effect on the Health and Outlook of the People," in the Hall of the Royal Society of Arts, Adelphi. Among subsequent fixtures is Mr. Henry C. Adams, M.Inst.C.E., on "The Problems of Small Water Supplies," whether for single houses or communities up to a population of 2,000. All the lectures will be illustrated by lantern slides, diagrams, or specimens, and are free to the public without tickets. Further particulars may be obtained of the Secretary, Mrs. Aubrey Richardson, O.B.E., at the offices of the Chadwick Trust, 13, Great George-street, Westminster.

ROMAN LONDON: IMPORTANT DISCOVERY

The site of the forum, or market place, built by the Romans during their occupation of London, from A.D. 43 to 409, has been discovered, states the *Daily Mail*. Until a month ago, the only indication that there was a forum in the City was the discovery several years ago of the foundations of a supposed basilica. Now this theory has been made a certainty by the revealing of the remains of an arcaded portico of imposing dimensions, with an arcade opening on to an open space towards the north, during the excavations for the new building of Barclays Bank at the north corner where Gracechurch-street, E.C., cuts across Lombard-street and Fenchurch-street. The bases of three of the piers of this arcade, 5½ ft. long by 2½ ft. wide, and still standing 3 ft. above the Roman floor level, were uncovered, together with the solid wall enclosing the portico on the south. It is evident that the arcade continued both under Gracechurch-street on the east and under the adjoining property on the west. We understand that the character and plan of the building is precisely that of the arcaded walks almost invariably surrounding Roman market places and used for the stalls and booths of the merchants. It is suggested, in view of this discovery, that a right-angle in the parish boundary of All Hallows, Lombard-street, may represent the south-west angle of the forum; that the first stretch of frontage on the north side of Fenchurch-street is the eastern termination; and that the series of parallel roads crossing Lombard-street to the west of the forum represents the Roman lay-out and that Clement's-lane and Abchurch-lane are on the site of the Roman roads dividing this part of the City into island sites.

EXHIBITION NOTES

PATERSON'S GALLERY.

AN exhibition of water-colour drawings by two architects—Mr. A. N. Paterson and Mr. J. J. Joass—at Paterson's Gallery in Bond-street should be of interest to our readers. Both architects are something of experts in the handling of water colour, those of Mr. Paterson rather contrasting by their vigour with the more dainty treatment by Mr. Joass. Mr. Joass is an accomplished draughtsman, as his penwork of many years ago evidenced, but his delicate and broad expression of landscape shows how much he is in sympathy with and how much of the things he has learnt from our older school of water-colour artists. Some of his drawings are nearly perfect in their serenity of breadth and dainty brushwork in fine distance and pleasant colour. Mr. Paterson has an architectural subject in most of his drawings, and some of these are admirable, as Nos. 27, 7, 19, and 20. The art of direct and simple expression is noticeable in two or three charming sketches. The collective exhibition is a welcome evidence that we still possess trained and keen students of natural scenery who do not belittle their work by foolish eccentricities and startling crudities.

THE BEAUX-ARTS GALLERY.

The drawings by Mr. Kerr-Lawson at the Beaux Arts Galleries make an interesting show. We like his work best where he gives us a broad decorative quality. His portraits are so excellent and his power of drawing so considerable that one is inclined to wonder at the indeterminate character of many of his water-colour drawings, though a few of these are pronounced successes.

WALKER'S GALLERIES.

During February our readers will have the opportunity of seeing, at Walker's Galleries, in Bond-street, several rare old coloured prints of English towns done at a period when changes were not so numerous and devastating to the charm of our streets as they are to-day. These prints help to remind us of that serenity and dignity which the great development of commercialism is fast driving from our streets. What charming pictures some of these old colour prints are may be realised in the beautiful print of Beverley by Malton.

HOUSEBUILDING: METHODS AND PROGRESS

IN an article on this subject in *The Glasgow Herald*, Mr. Percy B. Tubbs, F.R.I.B.A., P.P.S.A., points out that the net results of the Addison, Wheatley, and Chamberlain Acts is that since the war up to October last 335,000 houses, providing accommodation for 1,675,000 persons, have been provided. In addition, nearly 200,000 houses have been authorised, but not completed. The statistics of the additional houses that have been provided by private enterprise are available for the last two and a-half years only, but during that time 160,000 houses have been finished. A satisfactory feature is that a record number of houses were produced in 1925, and it is anticipated that this record will be exceeded in 1926. It is a relief to hear that the arrears of houses, due to the natural increase of population, the annual wastage of old houses, and the cessation of house-building during the war, is being overtaken in the country as a whole, but it is a melancholy fact that this does not apply to Scotland, where the supply of new houses is not reducing the deficit.

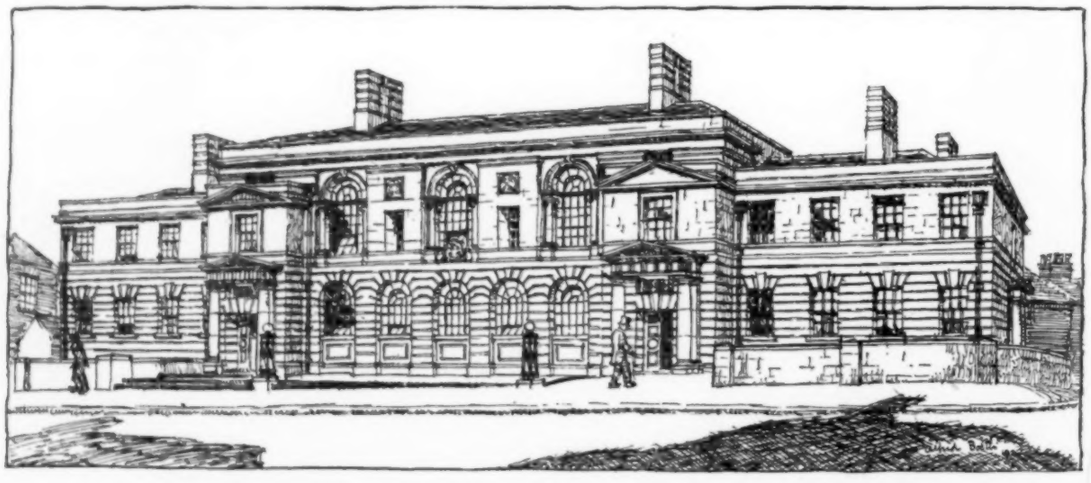
After a reference to the shortage of bricks and of bricklayers, Mr. Tubbs, referring to various "alternative" methods of house-building, says: "One of the factors which has prejudiced the claims of many alternative methods of construction is the deplorably ugly appearance of many of the houses produced by these methods. This disadvantage, however, is one which can be easily avoided if the engineers and manufacturers responsible for working out these new problems will consult with competent architects when the designs are being evolved. If the architect is called in at all, it is too often when the main lines of the scheme have been settled and with the idea of "dressing up" the engineer's plans.

"The official figures for the number of houses built by alternative methods show that definite arrangements have been made for 26,700 houses, of which 24,000 are various types of concrete.

"The question of housing is closely related to that of transport. Unfortunately, the tendency at present is for the improvement of transport facilities to encourage the growth of the large centres of population. This is almost wholly bad from the point of view of the mental and physical vigour of the people, but the fact must be faced that whatever housing reforms are made it will be necessary for certain classes of town workers to live near their employment.

"Although a strong preference exists for small two-story cottages with their own gardens, increased land values have made this an uneconomic proposition, and blocks of high dwellings provided with lifts will take their place. These flats possess advantages which go a long way to offset their disadvantages. It is possible to provide many communal facilities which could not be supplied to cottages. Experience has also shown that a larger population can be housed to the acre if high buildings are used, while, in addition, adequate playgrounds and parks can be provided. Provision of more open spaces and the prevention of atmospheric pollution by the encouragement of smokeless fuel, gas, and electricity are also means by which towns could be made much more healthy than they are at present. The system of 'zoning,' which has developed so rapidly in America since the war, also offers possibilities of great improvement in urban life. . . .

"Having admitted that the uncontrolled and indiscriminate growth of large towns is bad, some alternative must be found. The garden city movement, which was originated in this country by Ebenezer Howard, has made rapid strides here, on the Continent, and in America, and would seem to provide not merely a palliative but a complete and permanent solution of housing, and consequently to many social difficulties. . . . The first garden city was started at Letchworth, in Hertfordshire, some time before the war, and is developing into a flourishing town. Welwyn, also in Hertfordshire, was not begun until after the war, but there over 1,000 houses are completed and occupied, and about 800 are either started or will be quite shortly. Already several large factories are working, and others are under consideration. So the garden city idea is not mere theory but is being worked out and improved upon by actual experience."



New Court House, Rotherham. MR. P. O. PLATTS, A.R.I.B.A., Architect.

SPECIFICATIONS.—IV

By H. V. MILNES EMERSON, A.R.I.B.A.

BRICKLAYER (*continued*).

90. BANDS.—Form brick bands as shown, projecting 1½ in. from face, back cavity to be filled in with cement as the work proceeds.

91. ARCHES.—Turn discharging arches over openings and lintols (except where concrete lintols are used) the whole thickness in internal walls, and less the depth of reveal in external walls unless otherwise shown. Those to openings 2 ft. and under in width to be in one ring, and over 2 ft. in two rings.

Turn one-brick rings over fireplaces.

Turn half-brick trimmer arches where not otherwise specified to all fireplaces in upper floors the full size of the hearth. The centres to be left in for lathing. Level up in concrete to receive the finished hearth.

The gauged arches in best facings to be of rubbers or purpose-made bricks set in putty.

The straight external arches to be in red bricks set in cement with two courses of tiles projecting 1½ in. over same. In roughcast work the red brick arch is to project ½ in. in front of the roughcast.

The arches in remainder of brick facings to be axed and pointed or in half-brick rings where shown.

92. CILLS.—The cills to be formed with red or . . . bricks set on edge in cement, sloping outwards and projecting 1½ in. from face of wall, or,

To be brick on edge with two courses of tiles projecting 1½ in. under same, or,

To be two courses of plain tiles with broken joints projection 1½ in. and to have a slight slope, or to be laid level.

93. STEPS.—To be in hard red bricks set on edge in cement mortar upon cement concrete foundation.

94. OVERSAIL.—Oversail as required for plates, chimney-breasts, cornices, &c.

95. COPINGS.—Where not otherwise specified or shown to be brick on edge with two courses of plain tile creasing set to break joint in cement mortar (1 to 3), with cement weathering to projecting edges.

Garden wall coping to be brick on edge set in cement or lime mortar.

Note.—Where the coping abuts against the wall of adjoining property the top of the wall should have a cement weathering.

Copings can be in special made bricks or in stone.

External angles can be of hard stone and to 9 in. walls should not be less than 13½ in. by 9 in.

96. STACKS.—Build the whole of the chimney stacks above the roof level in cement mortar (or the last . . . inches in cement mortar). Finish the stack in red brick with moulded cornice and tile creasing as shown on drawing and put to each flue an approved terra-cotta pot, p.c. . . . set in cement with tiles set in cement on the splay as flaunching, or flaunch with cement. Run cement fillet to top of all projecting courses.

97. FLUES AND CHIMNEY BACKS.—Form 9 in. by 9 in. flues unless otherwise shown and parge and core same. Render in cement mortar (1 to 3), face of flues and breasts where passing through floors and roof. Render with lime and hair all chimney backs.

The heating chamber flue to be lined with fire bricks 4½ in. thick to a height of . . . feet above furnace level, and to be set in fireclay.

Provide and build where directed to all flues in bends at a less angle than 45 degrees, double soot doors and frames of approved pattern and also build in those provided with stoves.

Notes.—Flues can be lined with fireclay flue pipes. They are made circular, square or rectangular. Some local authorities will not accept a 9 in. diameter pipe as an equivalent to a 9 in. by 9 in. flue.

Fire-brick linings to flues should not be bonded to the ordinary brickwork and should be set in fireclay.

98. GAS FLUES.—Build 9 in. by 4½ in. flues to all gas fires and carry up same to top of stack and finish with rectangular terra-cotta pot, set in cement and flaunched as before specified.

Build in external walls where indicated on drawing a 9 in. by 3 in. flue from gas copper to be terminated at underside of first floor level with a 9 in. approved ventilating brick.

Notes.—All gas fires, coppers, &c., should have direct ventilation to the external air. Flues should be carried if possible to the top of stacks and finished with an open top. If the top is sealed and an opening made at side, the flue is more liable to downdraught.

Gas flues should not be made in cement concrete, as in contact with the gas fumes an effervescence is set up which in time chokes the flue. A lining should be used when forming flues in concrete.

For ventilating purposes gas-fire flues are accepted by some authorities, but others require in addition a ventilator in the external wall.

99. SETTING STOVES AND RANGES.—Fix and bed all stoves with brickwork in mortar, and the ranges with fire-bricks set in fireclay.

Note.—Cement concrete can be used in place of ordinary brickwork for setting purposes.

100. HEARTHS.—Provide the sum of .. p.c. per yard for tile hearths where coloured .... on plan. Set same in cement on cement-floated bed not less than .... in. thick.

The remaining hearths to be neat Portland cement coloured, with colouring material as directed and trowelled smooth.

101. RENDERING.—Rough render the back of all area, retaining walls, &c., next earth from footings to ground level with cement and sand (1 to 3) .... in. thick. (Or cover with asphalte).

102. ASPHALTE.—The asphalte to be laid by ..... or other approved firm.

Lay damp course ½ in. thick to all walls.

Put vertical damp course ¾ in. thick in two layers to all walls next earth from and connected to the horizontal damp course, carried .... in. above ground, level, and finished with a bevelled top.

Cover flats, &c., where shown, ¾ in. thick in two thicknesses laid to falls, as directed, with 6 in. skirtings to parapets, chimney stacks, &c., with angle fillet at bottom and tucked into groove at top. Form all drips, gutters, and outlets. Dress to eaves gutters and fix lead aprons between layers of asphalte supplied by plumber. Cover the top of all cornices over .. in. wide with layer of asphalte ½ in. thick.

Note.—If the asphalte is laid on boarding a layer of felt should be inserted between the asphalte and boards to allow the latter to expand or contract without affecting the asphalte. At angles, corners, slopes, &c., wire netting should be embedded in the asphalte as a reinforcement and to prevent the material "creeping."

103. CUT AND PIN.—Perform all necessary cuttings for oversailing, rakes, birdsmouths, squints, grooves, &c., cut or form notches or perforations for pipes, mortices for lugs, &c., and cut and pin ends of timbers.

Form vertical chases for ends of slab partitions.

104. BED PLATES, &C.—Bed in mortar all plates, lintols, and all timber, stone, or iron-work requiring same. Door and window frames to be bedded in fine hair mortar and pointed in cement.

105. FIXING SLIPS.—Build in all necessary wood slips 9 in. by 4½ in. by ⅞ in., for fixing joiners' work.

106. BREEZE BRICKS.—Build into jambs of all door and window openings breeze fixing bricks 9 in. by 4½ in. by 3 in., one each side every sixth course, and for skirtings, &c., every 3 ft. apart.

107. FLASHINGS.—Rake out joints of brickwork or cut chases in same, as required, for lead flashings, &c., and point in cement. All lead work to be wedged with oak or rolled lead wedges.

108. SINK SUPPORTS.—Build in No. 2 wrought-iron angle bars 2 in. by 2 in. by ¼ in. to each sink (or cast-iron cantilever brackets).

Note.—When the sink is fixed against a partition wall plain or glazed half-brick supports should be built.

109. COPPER.—To be built with 9 in. fire-brick in fireclay on .. in. concrete foundation. To have rounded front and provided with proper flue and ashpit. Fix heavy cast-iron door and frame with furnace bars and damper, and soot doors, as before specified.

Set strong .... gall. copper pan (or galvanised). Render the outside and top in cement and sand (1 to 3) .. in. thick, with chamfered edges, and put in 6 in. cement skirting to the two sides adjoining walls.

Provide .. in. beech copper lid dowelled with hardwood pins and fitted with hardwood handle.

110. TILING.—The walls of . . . to the level of and including window cill to be tiled with best (or seconds) approved white narrow tiles finished with quarter round capping set in neat tinted cement on a cement backing . . . thick.

(Describe if to be finished with moulded or plain top, coloured or otherwise.)

Provide and fix where directed to back of lavatory basins, sinks, &c., . . . yards of selected white tiles with quarter round capping set as before specified.

The internal window cills where shown and not otherwise specified to have 9 in. by 9 in. by 1 in. approved red quarry tile set in cement.

Provide the p.c. sum of . . . each for tile hearths to . . .

Provide and fix to gas fires white or coloured approved tile hearths on concrete slab 6 in. above floor with rounded corners and angles and provide and fix similar tiles one yard super to each fireplace as surrounds.

The hearth, back, sides, soffit and surrounds to kitchener and gas stove recess to be in approved white tiles (state firsts or seconds). Jambs to be full width and head to be 12 in. wide with ¼ round angle tiles to all external and internal angles.

111. TERRA-COTTA.—Fix the terra-cotta supplied by . . . in accordance with the drawings in cement mortar with weather-struck joints in black mortar. All blocks to be free from flaws, casts, twists, &c., and all mouldings and enrichments to be carefully modelled and sharp. Blocks carrying weights and the tailed parts of cornice blocks to have the hollows filled in with broken bricks and cement.

Notes.—Terra-cotta is made from specially prepared clays and can be obtained in various colours. The blocks are usually made hollow to prevent twisting and uneven shrinkage in burning. When the blocks are filled with concrete the cement and aggregate should be free from any tendency to expand.

112. PAVINGS.—Pave the entrance porch and . . . with 9 in. by 9 in. by 1 in. red quarries laid in cement mortar and pointed.

The paving in hall or . . . to have 9 in. by 9 in. by 2 in. . . . stone quarries one to every 20 sq. ft., set where directed.

Notes.—When the amount of paving is small, it can be placed under bricklayer, otherwise it should come under "Pavior." Various tiles and bricks can be used for paving purposes. For brick pavings, hard grey or brindle stocks, malm paviors, Staffordshire blue bricks, Suffolk whites, Broseley paving bricks, Dutch and Adamantine clinkers, &c., are suitable. For ordinary floors they should be laid level, in straight, herring-bone, square or other patterns. In stables, yards and garages where water is

used for washing purposes the floors should be laid with chequered bricks to suitable falls.

The tiles or bricks are set in cement upon a level floated bed ½ in. to 1 in. in thickness, and washed clean when set. Any stains can be removed with diluted hydrochloric acid.

113. MOSAIC.—Lay the . . . floor with polished marble mosaic filling and boarder to approved design in cement upon a floated cement surface 1 in. thick. (A p.c. sum could be provided for this work.)

Notes.—Mat sinkings, &c., can be edged with marble or slate borders.

Marble mosaic is formed with small cubes of marble in various colours. The polished face of the cube is glued in its position on a design made on stout brown paper. These designs are then laid in sections into position on the cement bed, and when set the paper is removed, rubbed down if necessary, and polished.

114. TERRAZZO.—The floors to . . . to be in terrazzo 1 in thick (or ¾ in.) laid direct on concrete or floated cement surface as required, in accordance with the design, rubbed to a smooth surface and polished.

Notes.—Terrazzo is a composition of coloured marble and granite chippings mixed with coloured cement laid and brought to a level surface. When set the surface is rubbed down, polished and oiled in.

Boarders are designs obtained by the use of battens and wood patterns which are moved as required, and the space filled in with the required coloured material.

Mat sinkings can be formed as for mosaic floors.

115. GRANOLITHIC CEMENT PAVING.—Pave the yard, &c., . . . with granolithic paving, to be 3 in. thick the lower two-thirds to be of concrete and the upper third composed of one part of cement to two parts of granite chippings to pass through a ½ in. mesh, free from dust and trowelled off within an hour of laying. To be put down in one operation and when complete to be well watered.

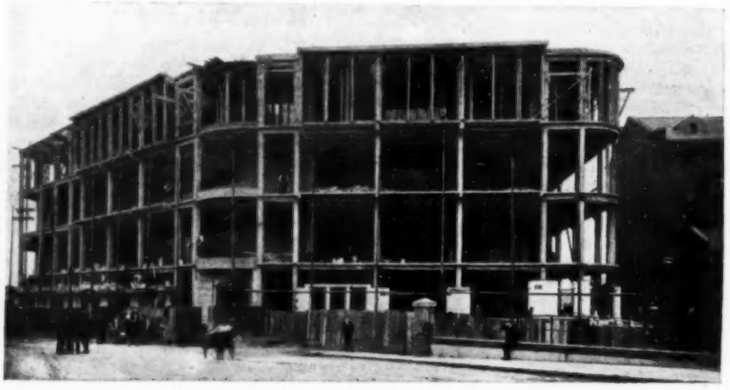
116. COLOURED PAVING.—The floor to scullery, &c. . . . to be of cement and sand (1 to 1) coloured red (or other colour) with the addition of approved colouring material, trowelled off to a smooth surface.

117. TAR PAVING.—Pave to . . . with tar paving to a finished thickness of 2 in. laid upon a bed of 4 in. of broken brick or other approved hardcore. The tar paving to be composed of limestone broken to a ¾ in. gauge, with a top dressing of similar stone or granite broken to ½ in. gauge all thoroughly incorporated with tar and oil well rolled and finished with fine lime stone or granite chippings well rolled in.

REINFORCED CONCRETE IN BUILDING CONSTRUCTION

IV.—DURABILITY: PRESERVATION OF STEEL: BUILDING WITHOUT SCAFFOLDS.

WITH most materials the process of decay commences as soon as a structure has been completed, and their appearance and strength will be perceptibly affected in course of time, but concrete begins to increase in durability and strength as soon as it has been placed, rapidly for the first few months and continuing at a progressively diminishing rate for all time.



Reinforced Concrete Construction without Scaffolding: Printing Works, Liverpool.

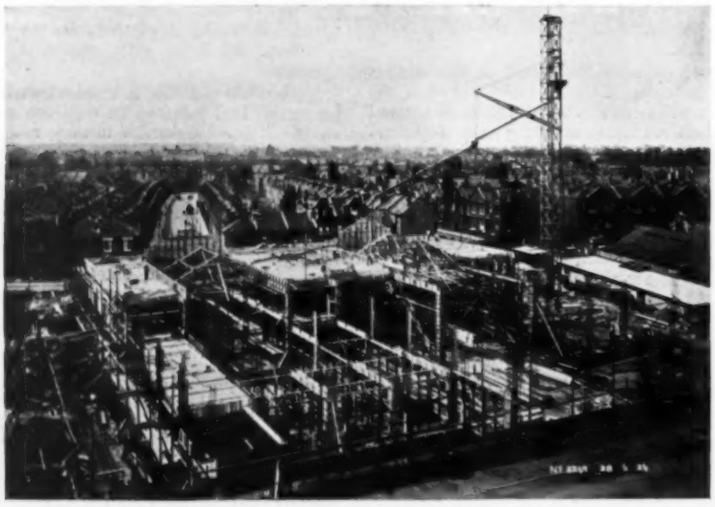
Preservation of Steel.

While the permanence of good concrete may be regarded as beyond serious question, doubts are still occasionally expressed as to the continued safety of embedded steel from corrosion. As showing the protection afforded to steel by concrete, one may recall an official report made a few years ago to the Dean and Chapter of St. Paul's. Referring to the condition of the iron tie encircling the dome of the Cathedral, the report says: "Some stone slabs were lifted; underneath was a fine, close bed of lime mortar and pieces of stone, a species of concrete which, when we raised the stone, seemed none the worse for any wettings it may have got. At last the tie rod was reached. There it lay in the most perfect condition, almost bright. It was a matter of no little joy to see the excellence of both the bar and the filling-in; one could feel assured that the ties were still doing the work Wren designed for them after 200 years." Another experience was that of the late Mr. W. T. Douglass, M.Inst.C.E., when demolishing in 1881 the Eddystone Lighthouse built by Smeaton in 1757. Mr. Douglass then discovered a bundle of iron rods which had been accidentally embedded in Aberthaw lime concrete 125 years previously, and, to use his own words, "the colour of these rods was just as if they had come from the mill, and there was no mark of rust whatever on them."

From among the very large number of other records proving the efficacy of concrete in the preservation of embedded steel, we select only a few for brief mention, and confining examples to those furnished by experience in this country and therefore capable of ready verification.

Specimens of pile heads cut off during the execution of harbour work at Southampton, and left on the foreshore for about eight years, being alternately exposed and covered four times daily by the double tides of Southampton Water, were removed to London. The concrete was cut away from some of the bars which were found to be in a perfect state of preservation. Similar testimony was furnished four or five years ago by Mr. W. E. Tresidder, the Borough Surveyor of Falmouth, who examined some pile heads that had been lying on the beach for about fifteen years, and found the steel rods quite bright. The same engineer, when inspecting the Prince of Wales Pier, Falmouth, after a collision, found that the steel reinforcement exposed by fracture of the concrete was still bright and showed no signs of rust. The County Surveyor of Hampshire, Mr. W. J. Taylor, M.Inst.C.E., found similar assurance of the protection afforded by concrete in some sheet piles removed during the widening of a bridge near Christchurch, the steelwork being in perfect condition after exposure for about fourteen years to tidal waters. Two other cases relate to the examination of reinforcement during alterations to the Cold Storage Warehouse at Southampton, and to Messrs. Weaver's flour mills, at Swansea, ten and fifteen years respectively after construction of the buildings. At Southampton, portions of the steel removed were said to be "as bright and free from rust as on the day when placed in the concrete"; and at Swansea the steel was said by Mr. R. G. Clark, A.M.Inst.C.E., to be "in a perfectly sound condition and without the slightest sign of rust."

It is interesting to note that steel rods which are slightly rusty when placed in concrete soon



Reinforced Concrete Construction without Scaffolding: Factory at Fulham.

lose the film of oxidised metal by chemical combination with constituents of the cement, the resulting compound constituting an additional protection and increasing materially the adhesion between the concrete and the steel. In illustration of the de-rusting of steel, we may refer to the results obtained by Mr. J. Hannay Thompson, M.Inst.C.E., the engineer of Dundee Harbour. Having embedded some clean and some very rusty pieces of steel in concrete blocks, placing the latter in sea-water, Mr. Thompson found, when breaking open the blocks after immersion for three years, that the new steel rods still retained their original blue colour, and that the rust had disappeared from the originally corroded pieces.

Thus we see that concrete operates not merely as a barrier holding corrosive influences at bay, but also as an agent absorbing and converting any initial film of rust into a preservative and otherwise useful compound.

In reinforced concrete construction a building can be erected story by story complete with walls, columns, floors and stairs, the bottom story providing a secure and convenient working platform for the building of the story next above, and so on to the top of the building. Workmen are able to move from floor to floor on spacious stairways, and materials of every kind can be raised by internal lifts or hoists working in lift wells or other openings through the various floors. By duplication of the moulds and shuttering for the concrete it is easy to arrange matters so that no delays occur, and it should be noted that since the introduction of the new quick-hardening variety of Portland cement, newly moulded columns and floors can be safely subjected to loads incidental to structural work within forty-eight hours after the deposition of the concrete.

In the case of steel-frame buildings it is usual to erect the whole of the steelwork before filling in the floors and walls. Where reinforced concrete is concerned, the floors are laid concurrently with the rest of the skeleton, and the walls can be built very soon after, whether they are of the same or of other material. Consequently the work of carpenters, joiners and various tradesmen can be started at an early date and extended without interruption to upper floors as soon as the latter are successively vacated by structural workers. Many large buildings have been erected with entirely satisfactory results by the adoption of this procedure, which clearly merits the consideration of architects and others concerned in the safety of building operations. The illustrations show typical examples of reinforced concrete construction without scaffolds.

STEEL HOUSES AND THE OPERATIVES

IN a communication to the Press Mr. George Hicks writes :—

"Some time ago the Trade Unions in the building industry were asked by the Government to expand their organisations, so as to bring into the industry sufficient labour to deal, in the normal way, with the housing problem. That was done, and the latest official figures give over one hundred thousand building operatives as unemployed. At the same time the building employers were asked to do all they could by extending their plant and staff to meet the exceptional demand for houses. That was done. The manufacturers of building material were also asked to extend their plant and produce more material. That was done. And now many of those manufacturers find themselves with heaps of building material on their hands. Mr. Baldwin knows this. The figures given in regard to unemployment amongst building operatives are Government figures; the facts in regard to the surplus of bricks and building materials are facts reported to a Government Committee. Then, some months later, without a word of consultation with the people (workmen and employers) normally engaged in house building, Mr. Baldwin makes his declaration of the Government's intention to undertake the erection of Weir steel houses. Mr. Neville Chamberlain, the Minister of Health, just recently complimented and thanked the building operatives for what they have done. And now Mr. Baldwin makes an open and violent attack on the building operatives, accuses us with endeavouring 'to maintain the close monopoly of the building trade,' to the detriment of the common good and the 'housing of the poor.' . . . .

"Mr. Baldwin knows perfectly well that there is no trouble with the building operatives in regard to the building of steel houses. He knows there is no opposition to the building of steel houses—or alternative houses of any kind—as far as the Building Trade Unions are concerned. He knows that the type of house is not the cause of the trouble. Atholl steel houses are being built without any trouble. Telford steel houses are being built without any trouble. He knows that the real cause of the trouble is . . . a question of hours, wages, and working conditions in regard to one firm. . . . Lord Weir has only to pay proper wages, and observe the very reasonable working conditions, to break the so-called 'monopoly.' If the Government persists in aiding Lord Weir to break down our wage and living standards, then we shall resist to the utmost, and resist with the greater zest because of the settled conviction that in doing so we are doing the public a service."

LAW REPORT

Ancient Lights: Injunction granted in Manchester Case.

At the Chancery Court in Manchester Vice-Chancellor Courthope Wilson, K.C., had last week before him the action brought by Henry Mainwaring, the owner of premises in Charles-street, Oxford-road, Manchester, in which he carries on the business of a brass and coppersmith, against Elkan Cohen, Albert Cohen, and Henry Doniger. He alleged that a new building in process of erection on adjacent land in Medlock-street had already materially injured the light coming to his premises, the utility of which would be destroyed if the defendants' plans were carried out fully. Sir Herbert Cunliffe, K.C., M.P., and Mr. J. Bennett (instructed by Lancashire, Humphreys & Grundy), represented the plaintiff; Mr. C. Atkinson, K.C., M.P., and Mr. C. E. R. Abbott (instructed by Hall, Hawkins & Co.) represented the defendants.

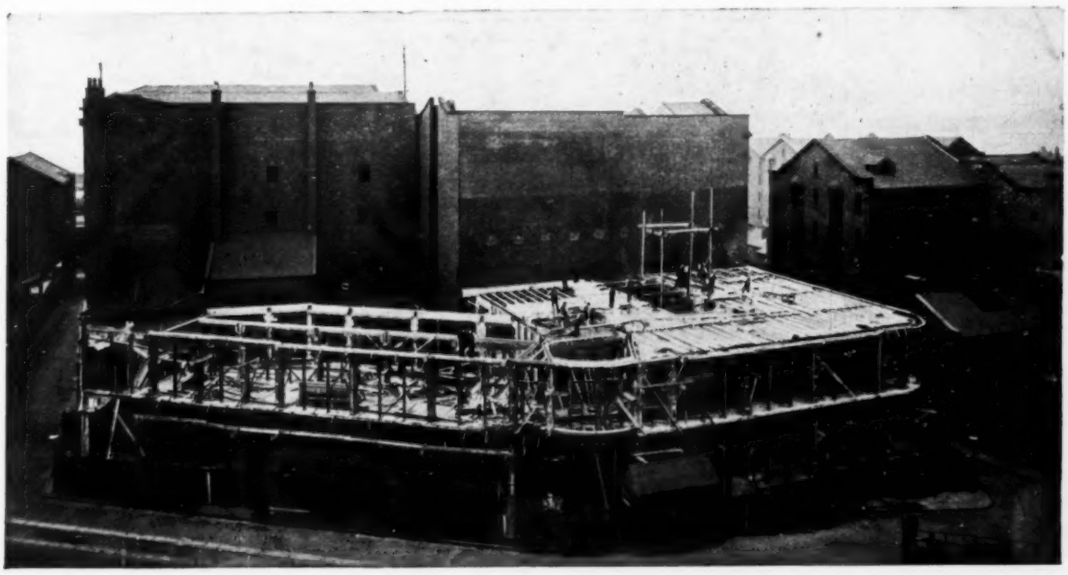
Sir Herbert Cunliffe said plaintiff's business was established about 80 years ago. Opposite the premises there formerly stood some cottages 23 ft. high. These had been taken away and the defendants were proposing to erect on the site a building to be let for shops and offices, which would be 60 or 70 ft. high when finished. The access of light and air to the plaintiff's windows would thereby be obstructed, and the utility of his premises destroyed.

Mr. Percy J. Waldram, F.S.I., gave evidence for the plaintiff, and no further evidence was given. After a long time had been occupied in negotiations the defendants submitted to judgment.

Mr. Atkinson said that from the first the view of his clients had been that such a small proportion of the plaintiff's lights were ancient that they were quite safe in going on with their plans. After hearing Mr. Waldram's evidence they could not conceal from themselves there was enough of the old lights left to secure the protection of the Court, and that what they intended would be an infringement of the plaintiff's rights. Having failed to come to terms the only reasonable course now was to submit to an injunction. The defendants would have to consider carefully to what point they must pull down.

Sir Herbert Cunliffe said his client was entitled to a mandatory order upon the defendants to pull down so much of the new building as conflicted with the injunction. If the offending part was removed within three months no application would be made to the Court.

The Vice-Chancellor gave judgment accordingly for the plaintiff with costs.



Reinforced Concrete Construction without Scaffolding: Printing Works, Liverpool.

THE "BUILDER" CONSTRUCTIONAL PROBLEM COMPETITION

AWARD FOR PROBLEM No. 2.

THE best solution for the construction of a subway between two warehouses has been submitted by Mr. S. D. Bowman, c/o C. H. Shannon & Son, of Malton, Yorks, to whom a prize of £1 has been awarded. As will be seen from the reproduction of his drawing, reinforced concrete has been employed with provision against the penetration of water. Natural lighting is obtained from two square tapering shafts terminating at the road level with road lights. The lighting would have been effective if the shafts had been placed under the footways with the pavement lights next to the kerb, thus avoiding the use of road lights and possible damage by vehicular traffic. Alternative methods of lighting shown by competitors are the use of pavement lights and shaft next to walls of buildings. This method has the advantage of giving a certain amount of light to the basement in addition to the subway. One competitor placed his subway next to the river wall, placed windows in the latter above H.W.M., and connected same to top of subway by means of steel trunks. As the latter had two bends in each it would appear an ineffective method of lighting. No competitor appears to have thought of employing a tube as a solution of this problem. The tube would be constructed about 10 ft. diameter with C.I. segments placed and bolted in position as the boring proceeds, the small cavity between earth and casing being filled under pressure with liquid lime or cement. It would probably be cheaper in the present case to excavate the ground and insert the tube filling in the space with concrete, the latter being about 6 in. thick all round the tube. Natural lighting could be obtained from vertical cast-iron shafts constructed in rings and bolted together. The top would be finished with pavement lights, which could also act as a ventilator. Doors generally have been omitted by competitors; they should be placed at each end of the subway in order to prevent fire and smoke passing from one building to the other.

In his report the winner says:—"The ground is to be excavated to the required depths and the bottom stepped as shown. All excavations to be properly planked and strutted and kept clear of water by pumping. If necessary interlocking steel sheet piles are to be driven on the river side of the excavations. The subway throughout to be constructed of reinforced concrete on a raft laid over the whole length, stepped as shown. On this raft is laid ¾ in. of asphalt rock, which is carried over the whole of the exterior of the subway which is to be of 9 in. concrete stepped as shown along the top. The floor of the subway to be 4 in. concrete laid over the rock asphalt. The natural lighting to be obtained by means of two heavy roadway lights, 2 ft. square, which are to be fixed in the positions shown as the top of square, splayed shafts from the subway. The shafts to be 5 in. of reinforced concrete with ¾ in. of asphalt rock on the exterior, which is carried up from the subway to the underside of the macadam. The lights themselves are set in a stone curb, as detail. The artificial lighting to be electric with the lamps set in the angle between the ceiling and the walls of the subway in the positions shown, and to be protected by wire cages. The concrete to be composed of one part of Portland cement, two parts of clean, washed, pit sand, and four parts of broken brick and stone to pass a ¾ in. mesh, and to be waterproofed."

PROBLEM No. 5.

In the 18 in. external brick wall of an upper floor of a warehouse an opening is to be formed 9 ft. high and 6 ft. wide, fitted with wood frame, fanlight, and doors, the latter to be 7 ft. high and to open inwards. On the outer face a hinged goods platform is to be provided with a swinging 10 cwt. goods hand crane, fixed to the wall at one side of the platform.

Draw to ½ in. scale plan, elevation and section with large size details through door, frame and goods platform. Show how the crane is secured to the wall, and the method of fixing the platform in a vertical position when not in use.

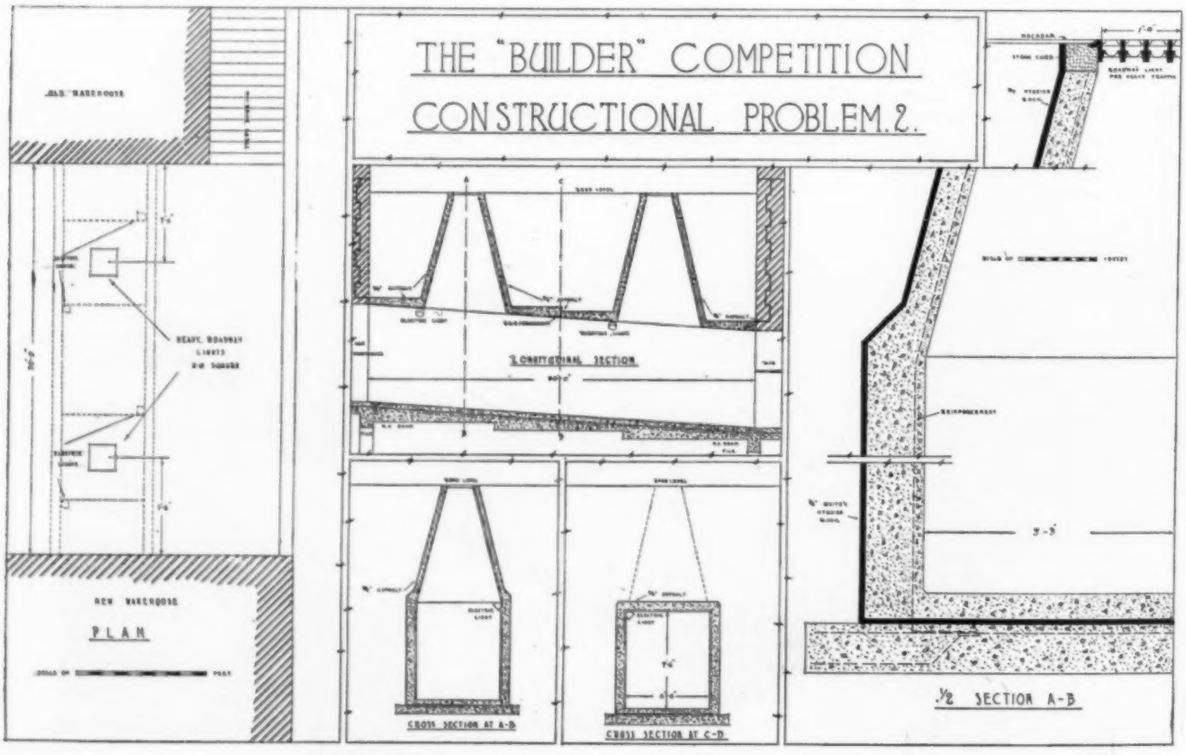
The drawings should not be coloured, but should be finished in black and white for the purpose of reproduction.

Answers, addressed to the Editor, and marked "Problem 5," to be sent in not later than first post, February 15. The Editor's decision to be final.

TOWN PLANNING DIFFICULTIES

Local authorities (writes a correspondent), are experiencing more difficulties than they confess in the preparation of town-planning schemes. For this reason, the preliminary statement just issued by the Nottingham Town-planning Committee for the development of a greater Nottingham is of exceptional interest. The Midland city is surrounded by urban and rural district councils, some of which are by no means acquainted with all the advantages of scientific town-planning. The Nottingham City Council, instead of attempting to rush all the Councils in the district into a joint scheme, are proceeding cautiously. They have divided the whole of the area into districts, and the present statement deals solely with the north-eastern portion of the city. The local members of the Council are unanimously of the opinion that to proceed by one district after another is the best method of ensuring the development of a wise town-planning scheme for the city as a whole. Study of the map also indicates another difficulty. The boundary of Derbyshire touches close to the Nottingham district. Accordingly, in order to ensure a joint scheme, the interest and support of Councils in Derbyshire as well as in Nottinghamshire ought to be engaged.

A practical financial difficulty has arisen in Nottingham as in other areas. Who is to pay for the actual cost of preparing preliminary statements? Can it be shared among local authorities? The importance of these considerations is being borne in mind by the Ministry of Health, and it is possible that County Councils will be encouraged to co-operate and possibly take some share in "paying the piper" in certain districts.



Winning Design, Problem No. 2. BY MR. S. D. BOWMAN.

CONCRETE ROADS IN AMERICA

In a paper on this subject, read before the Institution of Structural Engineers, Major R. A. B. Smith, M.C., M.I.Struct.E., A.M.Inst.C.E., said the first stretch of street paving in concrete was laid down in Bellefontaine, Ohio, thirty-three years ago by Mr. Snyder, a contractor, who was called in to make a crossing that would stand up to heavy loads of lumber and the hoofs of horses then used to haul the wagons and drays. This crossing constructed for the lumber company was still in use. Nearly all traffic to-day was rubber-tyred; the law insisted on this being the case and, generally speaking, the width of the tyre was in direct relation to the total weight of the vehicle when loaded.

With regard to the width of permanent paving, at first 14 ft. was considered sufficient. This rapidly became 16 ft., then 18 ft., and finally 20 ft., which was the minimum width demanded to-day. The reason for the narrower width no longer applied; in the early days it was essential to get from one city to another at a minimum cost and as rapidly as possible, in consequence, the 14-ft. strip was standardised. As the earlier cities became linked up the traffic problem became acute and it was realised that such a narrow width was dangerous. As more cities were linked up the lorry came in evidence and it was in consequence of this lorry traffic that the minimum width of 20 ft. was standardised. For this same reason changes had taken place over a period of years in the depth of the concrete. To start with 5 in. was sufficient for the light vehicles using the roads, but as more and more roads were completed heavier vehicles came on to them for which the roads had never been designed, and now the depth of concrete adopted was, generally speaking, about 8 in. for main roads with lesser depths for the side roads. In districts like California and Delaware, where the mechanical traffic had not yet been increased to any great extent by lorry traffic, the depth of 6 in. was still adhered to, but even here the edges had been thickened. This thickening of the edges of the concrete roads was interesting. Concrete altered in length due to the changes of temperature and moisture, and the effect of the former was greatest at the top of the slab. Consequently there was a greater change in length on the top of the slab and it tended to warp. At night the slab cooled more rapidly on the surface than at the bottom, and the tendency was for the edges and corners to lift up and part from the subgrade. These facts were proved by the Pittsburg and Bates' tests and others. It was obvious that a heavy lorry hitting the edge of a thin slab which had become separated from the subgrade would tend to break it. Hence the design adopted.

The author was of the opinion that United States engineers had forgotten the fact that due to heavier traffic they had thickened the centre of the roadway to such an extent that any additional thickness of the sides was now unnecessary and, as a result of inspection of various roads, he came to the conclusion that those built in New Jersey 8 in. thick throughout were as crackless as those in Wayne County, which were 8 in. thick in the centre and also thickened at the edges.

The general tendency in design was to use reinforcement about 1½ in. to 2 in. from the top, whereas, in this country we usually placed our reinforcement at the bottom of the concrete. The reason for putting reinforcement in the top was that the engineers of the United States considered there was more risk of failure in the concrete slab due to the movement of the subgrade than was likely to occur from impact of motor traffic. We must agree that if this was the case the maximum tensile stress would certainly occur in the top portion of the slab, except when the road was being laid over rather bad ground, such as a peat bog, the slab was then deflected to such an extent by a heavy load that tensile stresses of some magnitude must occur in the lower portion of the slab. It was, therefore, quite credible that in future design in this country we might find the best results were obtained, under normal circumstances, by using reinforcement in the top, and reinforcement in the bottom, or even both top and bottom, when constructing roads over boggy ground. The reinforcement was held in position by stirrups of the same material, bound to the longitudinal rods with copper wire. In a typical case the longitudinal rods were at 1 ft. intervals and the transverse rods at 1 ft. 6 in. intervals; the diameter of the bars being ½ in.

Mesh reinforcements were now being used in the States much the same as in this country.

What was known as continuous construction was now very uncommon; in fact, it might be said to be confined entirely to Washington, D.C.

On the Pacific coast, where there were many miles of concrete roads, the cost of steel was prohibitive; in consequence, expansion joints were placed at 20 ft. intervals, and also down the centre of the road where the width did not exceed 20 ft.; for greater widths they were placed at 10 ft. intervals longitudinally. Over the remainder of the country where steel was available at a reasonable price the expansion joints were 40 and 50 ft. apart. The former where the range of temperature was extreme, the latter where it was not quite so great.

If there was insufficient curing or too low a temperature occurred, at the end of 24 hours the tensile strength of the concrete would then be only about 50 lb. per square inch and transverse cracks would occur between 20 and 30 ft. apart. It was apparent, therefore, that using ordinary British Portland cement this curing should be strictly adhered to. When using a rapid hardening cement no further curing was necessary after 24 hours in ordinary weather or three days when temperatures were very low. The use of rapid hardening cement for this form of construction effected not only a saving in time, but also reduced the initial cost of the work as the cost of the watching and curing was probably more than the extra cost of the cement.

With regard to the sub-base, in districts where a sandy or gravel soil was met with there was no particular treatment of the sub-base beyond the usual grading and rolling. Where clay was encountered it was the usual practice to spread about 2 in. of sand after grading and consolidating with a roller. When this was done the sandy portion was thoroughly wetted over night in order that when the concrete was deposited no water might be taken out of the base of the concrete by absorption. If this were to occur the bottom portion of the concrete would not be able to set properly as insufficient water would remain in it for the complete crystallisation of the cement.

It was thought that it might be necessary

Choir Stalls in Western Hemlock, St. George's Church, Kidderminster.

SIR GILES GILBERT SCOTT, R.A., Architect.

to carry out this sand spreading when the concrete was laid on a very hard sub-base.

With regard to aggregate, there had been considerable discussion as to the best materials. It was thought for some time that gravel did not give such good wearing qualities as stone. It was thought now, however, that the real cause of the bad wearing qualities was the fact that the pit ballast was supplied as won and was not, therefore, properly graded, and often contained too high a percentage of fine material. It seemed probable, that provided proper care was taken at the pit to grade the gravel in the same way as stone was graded, a satisfactory aggregate could be obtained. The material must still be viewed with suspicion if there was more than 5 per cent. of foreign substance in it and should only be accepted if it passed a satisfactory test when mixed with cement. The tendency of construction to-day was undoubtedly in the direction of 10 ft. strips. By adopting this method it was possible to keep the traffic going whilst the road was being constructed. The 10 ft. strip being rapidly constructed the length of 10 ft. road was soon open to the public. The dividing lines of the strips were excellent safety lines for the traffic when the road was completed, and they undoubtedly assisted in reducing any tendency to crack. Usually steel forms were employed. The steel reinforcement used was then placed in position and the concrete deposited, care being taken to slice the concrete against the sides of the form with the object of obtaining a close-knit face when the form was removed. The surface was tamped and then tested with a straight-edge and any depressions filled in with the addition of a little fresh concrete and finally tamped. The belt then followed up.

Some difficulty had been previously experienced in the United States in fixing the pre-moulded filler in position when the expansion joints occurred during the day's work, and not merely at the dinner hour or at the end of the day's work. A very simple method of overcoming this trouble was now extensively adopted. A steel plate with the bottom edge cut away into a series of fairly large gaps was fixed across the road by means of stakes and the filler clipped to it. The concrete was then deposited against the filler, and also against the plate. Where the gaps existed in the plate the filler was thus supported by concrete on both sides, and when the plate was removed there was sufficient friction between the concrete and the filler to hold the latter in place. On removal of the plate, which was only about ¼ in. thick, the concrete was rammed against the filler to fill the vacant space. The stakes could be of iron with an eye at the top to ensure easy removal.

Whitehaven Castle.

Whitehaven Castle, West Cumberland, formerly the seat of the Earls of Lonsdale, was opened recently after being reconstructed as a hospital at a cost of £50,000.

Proposed High-level Thames Bridge.

At a recent meeting of the Woolwich Chamber of Commerce Mr. W. R. Davidge, vice-president of the Town-planning Institute, outlined a scheme for a suggested high-level bridge across the Thames at Woolwich. He said the suggested bridge, which would be about two miles long, would start on the high ground near Woolwich Barracks, and, proceeding at a height of some 120 ft., would end on the north side of the river near the Gas Light and Coke Company's works, linking the north and south circular road now in course of construction. The cost of such a bridge would be approximately £3,000,000, and this would provide a 50-ft. wide road. Such a bridge was the only possible solution of the traffic problem, and, more than this, the 50-ft. wide bridge would be four times more efficient than a tunnel, which would cost twice as much.

BRITISH COLUMBIA TIMBERS

IT is significant to note that the timber imports for 1925 were five times those of 1923 and nearly double those of 1924. There are many uses for which wood is pre-eminently suited and in which one may safely predict this material will never be superseded by any other. We are informed that the bulk of the imports referred to are of Douglas fir, a timber so adaptable that its uses range from railway sleepers and harbour piling to the finest interior joinery. Notable examples of the former work include extensions proceeding at the Belfast and Falmouth Docks; in the latter case the Douglas fir was creosoted in British Columbia with 10 lbs. of creosote per cubic foot. Its durability is proved by the Government jetty at Purfleet, which, we understand, is still in perfect condition after 33 years' service. Among the many ships whose decking is constructed of planks of this timber the best known are the s.s. *Berengaria* and the s.s. *Mauretania*.

Douglas fir is equally adequate for the best interior joinery, as is shown by the following list of buildings in which it has been employed:—Clare College, Cambridge University, by Sir G. Gilbert Scott, R.A.; a house near Windsor, by Sir Edwin Lutyens, R.A.; a church at Ilford, by Mr. Herbert Baker, A.R.I.B.A.; University College Nurses' Home, by Mr. W. Waterhouse, F.R.I.B.A.; Nottingham Palais de Danse, by Messrs. Thraves & Dawson; and many others.

Douglas fir flooring, in the shape of parquet flooring blocks and in tongued and grooved boards, is being used extensively on account of it being thoroughly seasoned and rift sawn—this latter quality produces a hard-wearing surface with a high polish. Plywood of this timber is also becoming popular in this country; this is due to its pleasant grain, uniform manufacture, and the fact that it can be obtained in large sizes and free of all defects. Recent developments in the staining of British Columbia woods has given them high place among decorative timbers, for the chemical treatment used produces very clear and good tone effects—qualities much to be desired.

Silver spruce owes its introduction to the British market to the British Admiralty, and more especially to the aeroplane industry. For 50 years the British Admiralty has used silver spruce for the manufacture of light oars, and now it is being used for the manufacture of aeroplane wing beams, struts and ribs, being light in weight, resilient, easily worked, and not readily split. The next most important use to which silver spruce is put in the United Kingdom is for cabin framing doors and lining; here its ability to take a small enamel finish is of prime importance. Silver spruce was used in all of the passenger liners recently constructed for the Cunard line.

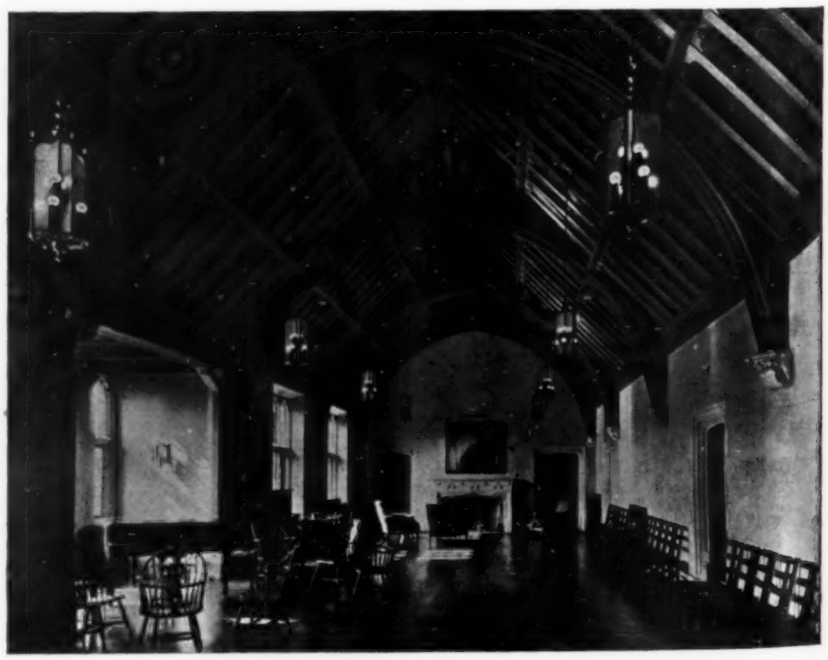
The grain effects of Western hemlock are quieter than those of Douglas fir, though the former possesses as good a surface for paint and enamel and contains neither resin or pitch. It is the wood best suited to replace the expensive Canadian yellow pine, and has been used recently for the seating and choir stalls of St. George's Church, Kidderminster, and all the interior joinery of a school at Ampleforth Abbey, Yorkshire, both of which buildings were erected to the designs of Sir G. Gilbert Scott.

The introduction of red cedar has proceeded more slowly, but the wood has solid virtues which commend it for special uses, such as passenger coach panelling and aeroplane lining. Doors of this wood have recently been placed upon the British market. We understand that they present a good surface for paint and enamel, and on account of their durability are particularly suitable for outside doors. Tiles and wall sheathing of this wood have been in service in various parts of the United Kingdom long enough to prove that they successfully withstand the climate.

[We illustrate on page 236 some architectural interiors in which British Columbia timbers have been used.]

Proposed Byron Memorial.

The executive committee of the Lord Byron International Memorial Fund is considering plans for the erection of a rood screen in the chancel of Hucknall Torkard Church, below which lies the Byron family vault containing the poet's remains. The committee has agreed to get into touch with the Ancient Monuments Committee, to secure that in erecting the screen proper care should be taken not to destroy any feature of the old church building.



Hart House, Toronto University: The Music Room Ceiling in British Columbia Cedar.

MESSRS. SPROATT & ROLPH, Architects.

ARCHITECTS' & BUILDERS' INQUIRY BUREAU

We are glad to give questions and answers, but cannot accept responsibility for contributed replies, especially on legal matters.

May we appeal to our correspondents to submit their queries on paper of a size easily filed, and written as legibly as possible, or, better still, in typewriting?—ED.

Ventilating Inlets.

SIR,—How is the area of ventilating inlets arrived at by calculation, the cubical contents and number of occupants of a room being given? I have Fletcher's Architectural "Hygiene," Notter and Firth, and Blake's "Drainage and Sanitation," but they do not show the figures clearly. Would a reader oblige by presenting a fully worked example in the case of an ordinary house?

STUDENT.

Flat Roof.

[REPLY TO "R. M. P.," JANUARY 29.]

SIR,—I should put in R.S.J. stanchions at about 10 ft. spaces on either side of proposed building, with similar beams taking bearing off the stanchions, and between these beams smaller R.S.J's as filler joists and arranged at 2 ft. 6 in. centres, with a light wire fabric. Erect shuttering and fill in with a good mixture of broken brick, sand, and Portland cement, making a flat roof, with falls, as necessary. Finish the top with ¾ in. asphalt, or render in Portland cement and sand and waterproofer. The space between stanchions may be filled with brickwork or concrete slabs, rendered in Portland cement and sand.

G. W. H.

Public Hall: Adaptable Floor.

[REPLY TO "W. R. B.," JANUARY 29.]

SIR,—I arranged some such idea in the City of London some years ago. But to make any definite suggestion one must be in possession of much more detail; a rough sketch of the building is necessary, showing heights, &c., and exits, if any. G. W. H.

Damp Plastered Wall.

[REPLY TO "WALL PAPER," JANUARY 29.]

SIR,—I should recommend your correspondent to try coating the inner surface of the wall with knotting, and to leave to harden thoroughly before re-papering. This can be done quite cheaply if the knotting is home-made with methylated spirits and shellac as a saturated solution. Patent knotting is expensive and certainly no more effective than the above.

EVERYMAN.

Other replies to this question have been posted direct to our correspondent.

Contract Documents.

[REPLY TO "QUERY," JANUARY 22.]

SIR,—In further reply to "Query," perhaps it would have been more correct to give the exact ruling in the case mentioned. The Practice Standing Committee had all documents which, to my mind, were as usual. The invitation to tender stated that the successful contractor was to sign the Standard R.I.B.A. Contract, and the specification had all the usual clauses.

The ruling referred to the following case: Croshaw *v.* Prichard & Renwick, K.B. Div., November 20, 1899, in *R.I.B.A. Journal*, of June 27, 1920. From that I gather that the omission on my part was in the form of tender itself. My tender form read: "We estimate and hereby tender and *undertake to execute the work* and provide the materials . . . . etc." The contractor on that occasion did not use the form, but wrote a letter: "We estimate the cost of . . . etc." It appears that the important words are those in italics.

As the contractor's letter was a tender and it was accepted, my statement was correct, but it appears that a tender in certain wording, if accepted, is a contract. I trust this is so, and if the same thing happen again, I shall again ask for a ruling. As the matter has had such publicity and is evidently of considerable interest, perhaps the Hon. Secretary of the Practice Standing Committee (to which I apologise for inadvertently not reporting them fully) would confirm this. READER.

Subsoil Question.

SIR,—Would a subsoil of clay, 150 ft. above sea level, with water 15 ft. or more below surface level, be more suitable to persons slightly subject to rheumatic troubles than a subsoil of gravel, 40 ft. above sea level, with water 5 ft. below surface? C. L.

"King Closer."

[REPLIES TO W. ABBOTT, JANUARY 22.]

SIR,—A "King Closer" is half a brick cut thus: The length × the depth × half the width.

J. TAYLOR.

SIR,—The two types of closers illustrated by your correspondent are generally called "King Closers" in the trade, and are equally serviceable to maintain bond in a rebated brick reveal. I cannot, however, substantiate this reading with any written authority. I should say that it is very improbable that an ordinary three-quarter bat has ever been included as a "King Closer," as it is quite unknown in the trade under this description, and it is unlikely that the term would entirely die out in this connection, if there had ever been a tradition to the contrary. My reading of Rivington, as quoted is that he amplifies his description of the "King Closer" as a three-quarter brick with the illustration showing the special form, and that the note as to the usual practice of cutting one corner off refers to the type illustrated in the second of your correspondent's sketches.

BRICKS.

[REPLY TO MR. J. H. S. RANDALL, JANUARY 29.]

SIR,—Surely the special brick described by your correspondent is not a King Closer at all, but a Queen Closer, which is described in all the text books as a brick cut longitudinally to break bond, but in practice generally superseded by two quarter bats owing to the greater facility with which a brick is cut across than longitudinally. The slight weakness in bond is negligible.

BRICKS.

Factory Flooring.

[REPLY TO "M. G. & SON," JANUARY 22.]

SIR,—I think a good firm of asphalters would be able to supply a durable surface of good gripping face, as thin as that required. Probably it would be necessary to reinforce it with E.M. lathing of fine gauge. DURO.

Reinforced Concrete Beams.

[REPLY TO "VULCAN," JANUARY 22.]

SIR,—Surely the variations in stress throughout the length of a reinforced concrete beam are taken up to the best advantage by the judicious placing of the reinforcing rods, which, in the case of a beam pinned in at each end, will be near the upper surface near the bearing and crossing the neutral axis at the point of contraflexure, to come into the lower part of the beam, always remaining in those parts that are in tension. STUDENT.

Recovering Costs.

[REPLY TO "JOINER," JANUARY 22.]

SIR,—In this case the whole procedure is very unbusinesslike. The question of recovering any costs at law would, I should think, depend upon the existence of an agreement between the architect and builder for such payment. There does not seem any redress against the client, who would deny liability and say the builders are pleased to give estimates gratis.

G. W. H.

THE NEW BIRTH OF ART IN ENGLAND

AT the Central School of Arts and Crafts, Southampton-row, W.C.1, on Wednesday, February 3, Sir Banister Fletcher, V.-P.R.I.B.A., delivered the first of a series of lectures on renaissance architecture in England from about the middle of the sixteenth century in the reigns of Henry VIII and his successors to the present day. Sir Banister described the operation of this revival of classical arts and culture in this country, where it was grafted on to the native Perpendicular and Tudor architecture, thus producing the picturesque and interesting styles known as Elizabethan and Jacobean. The Italian mode was, he said, first seen in Torrigiano's tomb of Henry VII in Westminster Abbey, and afterwards became the chief influence in the design of domestic buildings, which are the chief examples of the two transition styles. This "renaissance" coincided with the reformation in the church, and so was used for Protestant churches. The suppression of the monasteries in 1540 released money to be spent on other buildings, and a new spirit was abroad in the whole land. Italian details became in the Jacobean period more carefully studied, and a distinct style of house building was evolved.

THE WEEK IN PARLIAMENT

WESTMINSTER, *Wednesday.*

The King's Speech.

PARLIAMENT reassembled on Tuesday, February 2. The King's Speech from the Throne contianed the following references with regard to electrical reorganisation and housing:—

"With the object of securing greater economy and efficiency in the generation and transmission of electrical energy in the future, my Government has devised a scheme of reorganisation. A Bill to give effect to these proposals has been prepared and will shortly be introduced. . . .

"While I learn with satisfaction of the progress made in the building of new houses in the urban areas of England and Wales, the conditions under which many of my people are compelled to live, both in country districts and in the congested areas of numerous towns, still occasion me deep concern. My Ministers are now examining certain proposals for the improvement of these conditions, and if time permits they will submit to you measures designed to hasten the removal of the worst defects both in town and country."

New Nile Dam.

The new Nile Dam at Makwar, which has taken twelve years to construct, at a cost of £12,500,000, was opened recently. The zone the canal will irrigate has an area of 300,000 acres.

Steel Houses Rust.

We understand that a letter from the architect, read at a meeting of the Middle Ward Committee of Lanarkshire in Glasgow, stated that he had inspected the outside painted work of the steel houses recently erected at Harthill, and had discovered that on practically every block rusting was taking place under the surface, and that in a number of cases the paint was peeling off in large patches.

Archæological Discoveries in Peru.

Dr. W. M. McGovern, of the University of London, and Señor Julio Tello, of the Archæological Museum of the Peruvian Government, report the discovery on the Paracas Peninsula, about 150 miles S.E. of Lima, of the remains of two ancient cities. One is estimated to date back to 1000 B.C. and the other to 500 B.C. Near them are the ruins of a third town dating from Inca times. The walls and courtyards of both the older cities are of red porphyry.

An "Over-Masonry" Textural Finish in White Concrete.

Simply, economically, and quickly, with the ordinary tools of the trade, special textural finishes can be given to "Atlas White" Portland cement mortar renderings. The plasticity of the mortar ensures ease of manipulation. The illustration on this page shows an "Atlas White" stucco finish which gives the effect of hand-worked Portland cement stucco over a roughly-laid masonry wall. This effect can be obtained on a flat wall of brick, concrete or stone, by a simple method of trowel manipulation, as shown in the twelve photographs on the opposite page. I call this an "over-masonry" effect. It is secured by trowel manipulation of the finish coat only. It is obtained by applying the "Atlas White" finish coat in irregular thickness. The variations in the thicknesses should be ⅛ inch, or not more than ¼ inch at the

THE BUILDING TRADE

SOME OBSERVATIONS ON WORKMEN'S COMPENSATION.—V

(IN CONNECTION WITH THE AMENDING ACT, 1923).

HITHERTO our progress has been slow because of the complication of reading the provisions contained in section 7 of the Act of 1923 [1 (2), 1925] into section 1, subsection (1) of the principal Act [1 (1), 1925] in connection with the expression "out of and in the course of the employment." There are two other matters contained in section 1, subsection (1) of the principal Act affected by amendment, viz., the word "Workman" (3 Act, 1925) and the provisions in the "First Schedule." We shall deal with the word "workman" when we come to section 13, and the Schedules later on, so the next amendment we have to consider is the repeal of section 1, subsection (2), paragraph (*a*), which relates to

The Waiting Period.

Under that paragraph the employer was not liable to pay compensation in respect of any injury which did not disable the workman for a period of at least one week from earning full wages at the work at which he was employed. Section 5 of the Act of 1923 has now to be substituted for this paragraph, and it provides "Compensation shall be payable under the principal Act if the injury disables the workman for more than three days from earning full wages at the work at which he was employed, but shall not be payable in respect of the first three days on which he is so disabled unless the incapacity lasts for four weeks or upwards" (see now section 1 (1) (*i*) and section 9 (1) (*a*), 1925). It has to be remembered that this section as well as section 7, which we considered in our former articles, being amongst the sections 2 to 10 of the Act of 1923, has no application where the accident has happened before the commencement of the Act, January 1, 1924 (see section 30).

Under section 50 of the Act, 1925, that Act is to come into force May 1, 1926, but is not to apply in any case where the accident happened before January 1, 1924, while subsection (2) of the same section declares that the Acts repealed shall continue to apply to cases where the accident happened before January 1, 1914, therefore the same questions will arise under the new Act as have arisen in connection with the existing Acts.

Award Where Other Proceedings Instituted.

An important amendment has been made in section 1, subsection (4) of the principal Act by section 18 of the amending Act, 1923 [29 (2) 1925]. Section 1, subsection (4) provided that if within the time limited by the principal Act for taking proceedings (six months from the date of accident or, in the case of death, six months from the death; see section 2, subsection (1)) an action was brought independently of the Workmen's Compensation Act (meaning by this at common law or under the Employers Liability Act or Lord Campbell's Act), and in that action it was determined that the employer was not liable, but that he would be liable to pay compensation under the Workmen's Compensation Act, the action should be dismissed, but if the plaintiff elected, the Court should proceed to assess that compensation, with power, however, to deduct from the compensation all or part of the costs which in its judgment the Court held to have been incurred by bringing the action instead of proceeding by arbitration under the Act.

It was held by the Court of Appeal in Harrison *v.* Wythemore Colliery Company (1922, 2 K.B. 674; *The Builder*, March 30, 1922) that if the workman exercised this option and the Court assessed the compensation in the action brought independently of the Act, that put an end to the action, and no appeal from the finding of the Court in the action would lie.

Section 18 [29 (2) 1925], is intended to do away with the effect of the above decision. The section in the main follows the wording of the original subsection and is substituted for it, but provides that the question whether there is a cause of action independently of the Act can be decided in "such action or on appeal," and that on an appeal by either party the workman may, if the action is dismissed, apply for the assessment of compensation under the Act. It further provides that an appellate tribunal instead of making this assessment itself may remit the case to the county court with a direction as to the costs.

Notices of Accident.

Section 2 of the principal Act seems the next affected by any amendment. This is amended by section 10 of the amending Act, 1923, and the provisions of the two sections will now be found in section 14 of the Act of 1925.

Section 10 introduces such drastic amendments into the provisions of section 2 of the principal Act that they are somewhat difficult to set out clearly.

Section 2, subsection (1) remains unaffected down to the proviso, but proviso (*a*) is amplified by section 10, subsection (2), so that it reads, "The want of or any defect or inaccuracy in such notice shall not be a bar to the maintenance of such proceedings if the employer is proved to have had knowledge of the accident from any other source at or about the time of the accident," and then continuing as in the principal Act. [See 14 (1), 1925.]

This proviso has not been the subject of any actual judicial interpretation at present, but it has been commented upon in the recent case, Fenton *v.* Owners of Ship Kelvin (1925, 2 K.B. 473). That was a case which turned upon the question whether under section 2, subsection (1) of the principal Act there had been reasonable cause for not giving notice of the accident. The man had suffered shipwreck and the exposure had set up a serious illness, but it had not become apparent for some time. It was not necessary for the Court of Appeal to consider the provisions of section 10, subsection (2) of the amending Act, for the County Court Judge had held that there was "reasonable cause," and the Court affirmed his decision; but all the members of the Court of Appeal referred to the subsection, though reserving any decision upon it. Both the Master of the Rolls and Lord Justice Warrington expressed the opinion that very difficult questions would arise for decision under it; and Lord Justice Atkin pointed out that one of these difficult questions would be what is meant by "knowledge of the accident." Whether knowledge of an accident was intended or knowledge of injury to a particular workman? His Lordship pointed out that the provision we shall refer to below, contained in section 10, subsection (2), (*b*) which, in the case of workshops, factories, &c., makes the want of or defect in notice no bar to proceedings, "if the accident has been reported by or on behalf of the employer to an inspector of mines or factories," might be used as an argument that the expression only refers to the occurrence of an accident, and not to injury sustained by any particular workman, for, if the accident injured one man, it would be reported, and it would not follow that all men injured would be mentioned in the report, but he expressly refrained from giving any decision on the point.

Returning to the amendments introduced into section 2 of the principal Act—subsection (2), as amended, will read, "Notice in respect of an injury may be given either in writing or orally to the employer or to any foreman or other official under whose supervision the workman is employed, or to any person designated for the purpose by the employer, and shall give the name and address of the person injured, and shall state in ordinary language the cause of the injury and the date at which the accident happened."

The above amendments are of general application, but the section introduces a number of new provisions in the case of mines, quarries, factories or workshops. By subsection (1), under penalty there shall be kept constantly posted up in some conspicuous place at or near every mine, quarry, factory or workshop, and on every ship to which section 7 of the principal Act applies, where it can conveniently be read by the persons employed, a summary, in such form as may be prescribed (that is, by the Secretary of State; see subsection (6)) of the requirements of the principal Act, as amended by this Act, with regard to the giving of notice of accidents and the making of claims and the procedure to be followed in the case of industrial diseases, and if such summary becomes effaced, obliterated, or destroyed, it must be renewed with all reasonable dispatch. [15 (1), 1925, and as to ships 35 (1) (*b*), 1925.] By subsection (2) [15 (2), 1925], it is provided that the want of or any defect or inaccuracy in the notice of an accident required by section 2 of the principal Act [14, 1925], which we have referred to above, shall not be a bar to the maintenance of proceedings where the employer is the owner of a mine or quarry, or the occupier of a factory or workshop, (*a*) if such summary has not been posted up in accordance with the provisions of this section, (*b*) if the accident has been reported by or on behalf of the employer to an inspector of mines or factories, (*c*) if the accident has been entered in any register of accidents kept by or on behalf of the employer, (*d*) if the injury has been treated in an ambulance at the mine, &c.

Subsection (4) [15 (3), 1925] enacts that for facilitating notices of accident for the purposes of section 2 of the principal Act [14, 1925] a book shall be kept at every mine, quarry, factory or workshop in the prescribed form, in which the prescribed particulars of accidents may be entered by the injured workman or some other person acting on his behalf, and an entry in such book, if made as soon as practicable after the happening of the accident, shall be sufficient notice of the accident.

This book shall be kept so as to be readily accessible at all reasonable times to any injured workman or some other person acting on his behalf, and if the provisions of this subsection are not complied with, the mine, quarry, factory or workshop shall be deemed not to have been kept in conformity with the enactments relating thereto. This means in the case of a factory the occupier would be liable to a penalty under section 135 of the Factory Act, 1901, and the Acts relating to mines and quarries also impose penalties; so under this section there are two penal subsections, subsection (1) and subsection (4). Subsection (6) [15 (4), 1925] defines "factory or workshop" as including any works or premises to which any of the provisions of the Factory and Workshops Acts, 1901 to 1920, apply.

One or two general observations must be made on this section. This last definition resembles very closely the definition of a "factory" contained in the original Workmen's Compensation Act, 1897, under which Act endless litigation ensued to determine what was a "factory." The principal Act of 1906, proceeding on broader lines, put an end to this litigation, but the amending Act marks a retrograde step, inasmuch as it reimposes upon employers the necessity of ascertaining whether the undertaking they carry on will be deemed "a factory or workshop," which is no easy question under this definition, which includes any works or premises to which any of the provisions of the Factory Acts apply, As we pointed out in an article on the Factory Bill introduced in 1924 (see *The Builder*, September 19, 1924), if the definition contained in that Bill and the provisions contained in some of its clauses were to become law, it would bring in persons employing more than two persons under certain circumstances.

Section 10, subsection (3), as regards notices of accident, marks an improvement on the principal Act, which did not specify whether the notice of accident must be in writing. In Hughes *v.* Coed Talon Company (1909, 1 K.B. 957) it was held that this notice must be in writing, but this subsection will override that.

Subsection (5) of section 10 of the amending Act has still to be noticed. Paragraph (4) of the First Schedule to the principal Act [17, 1925] provides that "where a workman has given notice of accident" the employer may require him to submit to examination by a medical practitioner employed and paid by the employer. Subsection (5) of section 10 of the Act, 1923 [17, 1925] provides that the fact the notice is now dispensed with in certain cases shall not deprive the employer of the right conferred by paragraph (4) of requiring the workman to submit to medical examination.

This section occurs in that group of sections "Two to ten" which section 30 of the amending Act provided should not apply to any case where the accident happened before the commencement of that Act (January 1, 1924). The expression "Two to ten" is ambiguous, but text-book writers have assumed it means inclusive, and now there is support for this view, for the consolidating Act which comes into force May 1, 1926, contains in section 50 a declaration that that Act shall not apply in any case where the accident happened before January 1, 1924.

The next section in the principal Act subject of amendment is section 3, which has the side-note "Contracting out," but which is now incorporated in section 31 of the Act, 1925, with the more appropriate sidenote "Substitution of liability under scheme for liability under Act."

The amendments introduced by section 6 of the Act, 1923, can be dismissed in a few words. Section 6, subsection (1) contains provisions enabling the Registrar of Friendly Societies to amend schemes certified by him under section 3, subsection (1) of the principal Act if they "no longer comply with the requirements of that section by reason of the foregoing provisions of this Act," that is to say, if they are less favourable to the workman than they would be if the amendments introduced into the scales of compensation contained in the foregoing sections of the Act had been applied. By subsection (2) the amended scheme is to take effect as from the commencement of this Act, and it is necessary to note that under section 30 the amended scheme is also declared not to apply to any case where the accident happened before the commencement of this Act (January 1, 1924). For obvious reasons it has been unnecessary to incorporate this section into the Act, 1925, as none of its provisions are to apply in any case where the accident happened before January 1, 1924.

The scales of compensation are dealt with in the earlier sections of the amending Act, but as they fall within the First Schedule of the principal Act, they will be considered when we treat of the amendments to First Schedule.

Section 17 of the amending Act [31 (4), 1925] inserts a new provision in section 3 of the principal Act that the Registrar of Friendly Societies shall not certify a scheme or renew the certificate of a scheme unless he is satisfied that adequate provision is made to secure the discharge of liabilities under the scheme during its currency and after it is revoked or expires.

Section 24 (5) of the amending Act [30, 1925] provides that section 6 of the principal Act [30, 1925] (which relates to remedies both against an employer and a stranger), and paragraph (19) of the First Schedule to the principal Act [40, 1925] (which prohibits a weekly payment or a sum by way of redemption thereof being assigned, charged or attached), shall apply to sums payable by way of compensation under a scheme certified under section 3 of the principal Act [31, Act, 1925]. This reference to section 6 of the principal Act [30, 1925] refers to the right conferred upon the employer who has paid compensation to be indemnified by a person who is liable in damages in respect of the injury for which compensation was paid.

DILAPIDATIONS AND WASTE.—V

By W. T. CRESWELL, Lic.R.I.B.A.
Associate (late Fellow) Surveyors' Institution; F.R.S.I.; Barrister-at-Law.

GENERAL CONSTRUCTION OF REPAIRING COVENANTS.—II.

SPECIAL covenants to repair vary in their terms, and although as stated in the previous article, in the case of Calthorpe *v.* McOscar (1924), 1 K.B. 716, Bankes, L.J., said, "I attach no importance to the particular form of words used in the covenant"; and Scrutton, L.J., said, "I do not think there is any substantial difference in construction between 'repair,' which must mean 'repair reasonably or properly,' and 'keep in good repair,' or 'sufficient repair,' or "tenantable repair,' or most of the various phrases cited to us," it will, nevertheless, be useful to refer to some of the cases in which these or similar terms have appeared, and consider the construction put upon them from time to time by the Courts.

In Lurcott *v.* Wakely (1911), 1 K.B. 905, Buckley, L.J., said, "The question of repair is in every case one of degree." It would appear, therefore, that the duty of the architect or surveyor is to use his experience and technical knowledge to fix this degree, and when that is not accepted by one or other of the parties, it becomes the duty of the lawyer to determine how far the decision of the architect or surveyor is in line with legal precedent. In certain instances it becomes necessary for the lawyer to avail himself of the expert witness of other architects or surveyors.

What Must Satisfy the Architect or Surveyor.

If a covenant requires the repairs to premises to be done to the satisfaction of the architect or surveyor, then if the repairs carried out are such as ought reasonably to satisfy an architect or surveyor, that is sufficient. (See Doe *v.* Jones [1848], 2 C. & K., 743.)

What Must Satisfy the Owner or Tenant.

The state of repair necessary is that which will satisfy a respectable occupant using the premises fairly; but not that state of repair which an owner or tenant might fancy. (See Cooke *v.* Cholmondeley [1848] 4 Drew, 426.)

Deterioration in Value of Premises.

In Morgan *v.* Hardy (1886), 17 K.B.D. 770, in an action against the assignee of a lease of a house for breach of covenant to leave the premises in repair at the end of the term, it appeared that, owing to changes in the surrounding property, the house had so far altered in value since the commencement of the lease, that it would be as valuable for letting purposes if some of the repairs required according to the strict meaning of the covenant were either omitted or executed at a cheaper rate than was usual under such a covenant. It was held that the facts were no ground for limiting the liability of the defendant under the covenant, and that the measure of damage for the breach of it was the amount required to put the premises into such repair as was originally contemplated by the covenant.

The decision of Denman, J., on the part of the case referring to the covenant to repair was subsequently affirmed in the Court of Appeal in 1887 (see 35, *Weekly Reporter*, 588), and was followed in Calthorpe *v.* McOscar (*supra*).

In Proudfoot *v.* Hart (1890) 25 Q.B.D. 42 it was suggested that "habitable repair," "tenantable repair" and "good repair" all meant much the same thing. Here it should be noted there was an agreement for three years only, The covenant said that during the term the premises were to be kept "in good tenantable repair and so leave the same at the expiration thereof." Controversy arose as to

(1) Repapering walls where the paper was worn out.

(2) Repairing the internal woodwork where the paint had worn off.

(3) Whitewashing and cleaning staircases and ceilings.

(4) Replacing with a new floor a defective kitchen floor.

The premises were out of tenantable repair when the tenancy began, and there was no mention of "fair wear and tear." It was held that it is the duty of a tenant if premises are not in tenantable repair when the tenancy begins, to put them into repair, keep them in repair, and deliver them up in tenantable repair; consideration being given to the age of the premises and the character of the property. That the premises must be left in such a state as would satisfy a reasonably-minded person of the class likely to take them. Papering worn out need not be renewed but if torn off it must be renewed, and that the value of the paper must be suitable to the class of house. Painting worn or discoloured in a large house in a wealthy district must be renewed, but not so in a lower class house in a poor district. The ceilings must be left in a less dirty state in a West End house than in an East End house. Gilding could not be demanded in either case. The tenant was held liable to repair the floor, or to renew it if beyond repair.

This case, usually regarded as a stand-by, was relied upon in Calthorpe *v.* McOscar (*supra*) in the Court below. McCardie, J., had based his judgment upon it. He said it "supplies a useful working rule for the normal covenants to repair however curiously they may be worded." In the Court of Appeal, however, Bankes, L.J., said: "In my opinion the case of Proudfoot *v.* Hart (*supra*) lays down no rule of general application."

In Calthorpe *v.* McOscar (*supra*) there was a lease of three newly-erected houses made in 1825 for 95 years. The covenant as to repairs was in wide terms, but put shortly it was that the lessee would during the term well and sufficiently repair the premises with all manner of necessary reparations, and would yield up at the end of the term the said premises so being in all things well and sufficiently repaired.

At the end of the term the assignee of the reversion brought an action against the assignees of the lease for breach of the covenant. The Court referred it to arbitration. At the commencement of the term the houses were country houses. At the end of the term the only tenants possible would be tenants on short terms.

The Arbitrator assessed damages at two alternative sums. The smaller sum on the basis that the defendants were liable to execute such repairs only as, in view of the age, character and locality of the premises would render them reasonably fit to satisfy the requirements of reasonably minded tenants of the class that would then be likely to occupy them. He found that tenants of this class would only require such repairs as would keep out wind and water. It was held that this was not the proper measure of liability, and that the defendants were liable for the cost of doing all necessary acts well and sufficiently to repair the premises in the words of the covenant; that is to say, for the cost of putting them into that state of repair in which they would be found if they had been managed by a reasonably minded owner—having regard to their age, to their character and ordinary uses or the requirements of tenants of this class likely to take them at the time of the demise or at the commencement of the term.

This case established the rule that repairs means making good damage so as to leave the subject matter so far as possible as though it had not been damaged; and that a deterioration in the class of tenancy does not lower the standard of repairs.

It has already been pointed out that in Proudfoot *v.* Hart (*supra*) there was only a three years' tenancy; whereas, in the case just cited there was a ninety-five years' lease, and Bankes, L.J., said: "In construing the covenant in the present case, or any other covenant, it is material to see what the subject matter was which the parties had in their contem-

plation when the covenant was entered into. . . . Here there is no doubt as to the subject matter. It was the three houses described in the lease, and the obligation undertaken was the repair of those houses. How can the extent of such an obligation be measured by the requirements of the class of tenants who happen to be occupying the premises ninety-five years afterwards? Proudfoot *v.* Hart (*supra*) did not, in my opinion, lay down any such rule. When the facts of that case are looked into it is manifest that the Lords Justices who decided the case had not such question in their minds. What they were dealing with was a three years' agreement for a tenancy, in which case the class of tenants at the end of the tenancy was, in their view, no doubt the same class as the class of tenants at the commencement."

Whether Repair necessitates Partial or Complete Reconstruction.

In Lister *v.* Lane (1893) 2 Q.B. 212 the covenant was to sufficiently and substantially repair, uphold, sustain, maintain, amend and keep. The demise was for seven years, and the dwelling house was over one hundred years of age. One of the walls bulged out before the end of the term, and was condemned by the District Surveyor as a dangerous structure, and was pulled down. It was built on a timber platform resting on mud, and the platform had rotted. It could have been underpinned by the tenant, but the Court said underpinning is not repairing, and the tenant was held not liable to rebuild the house.

In Lurcott *v.* Wakely and Wheeler (1911) 1 K.B. 905, the lease contained a covenant to substantially repair and keep in thorough repair and good condition the demised premises, and at the end or sooner determination of the term, to deliver up the same to the lessors, so repaired and kept. Shortly before the expiration of the term, the London County Council served a notice on the owner and occupiers under the London Building Acts requiring them to take down the front external wall of the house to the level of the ground floor as being "a dangerous structure, and the plaintiff called upon the defendants to comply with the notice, which they failed to do. After the expiration of the term, the plaintiff, in compliance with a demolition order of a police magistrate, took down the wall to the level of the ground floor, and then, on receiving a further notice thereon from the London County Council, took down the remainder of the wall and rebuilt it. The house was very old and the condition of the wall was caused by old age, and the wall could not have been repaired without rebuilding it. It was held that the defendants (the lessees) were liable under the covenant to recoup the plaintiff the cost of taking down and rebuilding the wall. Moulton, L. J., said: "When the word 'repair' is applied to a complex matter like a house, I have no doubt that the repair includes the replacement of parts. Of course, if a house had tumbled down, or was down, the word 'repair' could not be used to cover rebuilding." Buckley, L. J., said: "Repair always involves renewal; renewal of a part; of a subordinate part. . . . Repair is restoration by renewal or replacement of subsidiary parts of a whole."

The difference between Lister *v.* Lane (*supra*) and Lurcott *v.* Wakely (*supra*) is, that the former case decided that the lessee was not liable to rebuild a house which, through age and its condition, was entirely past repair; whilst the latter case determined that the age and nature of the structure do not relieve the lessee from the duty of maintaining it if he has undertaken to do so, except in special circumstances, as in Lister *v.* Lane (*supra*), where repair had become impossible. The lessee must, if necessary, replace a portion of the premises.

In Calthorpe *v.* McOscar (*supra*) Scrutton, L.J., said: "I would only say that on the question of age in buildings, guidance will be found in the judgments in Lurcott *v.* Wakely (*supra*), care being taken to distinguish between partial repairs and complete reconstruction, as in Lister *v.* Lane (*supra*).

In Wright *v.* Lawson (1903) 19 T.L., R. 203 there was a covenant substantially and effectually to repair, uphold, maintain, drain, paint, whitewash, and cleanse. On the first floor there was a bay window, and a notice had been served under the London Buildings Acts to take it down and otherwise secure. It was found that the rebuilding of the bay window was necessary. It was held that the replacing of the old window was not required by the covenant and that the tenant, in rebuilding, had complied with the obligations under the law, and was not liable.

Repairs Involving Improvements.

If repairs cannot be done without effecting improvements, then the fact does not relieve the tenant from the obligation to repair. In Howe *v.* Botwood (1913) 2 K.B., 387 the defendant (the lessee) covenantad to "pay and discharge all rates, taxes, assessments, charges and outgoings whatsoever which now are or during the said term shall be imposed or charged on the premises or the landlord or tenant in respect thereof." The plaintiff (the lessor) covenanted to "keep the exterior of the said dwelling house and buildings in repair." During the tenancy an outside drain was found to be defective, and the local authority compelled the plaintiff to put it in proper condition, and this involved reconstruction and improvements, and for the outlay attributable only to the reconstruction and improvements the plaintiff claimed to be recouped by the defendant. It was held that the whole expense fell upon the plaintiff inasmuch as he could not perform his covenant to keep the exterior of the house and buildings in repair without executing the reconstruction or improvment.

HOUSING SCHEMES AND COMPENSATION

A MASS meeting was recently held under the auspices of the Property Owners' Protection Association to protest against what was termed the confiscation of property under the Housing Act, 1925. In the report of this meeting the particular section or sections of the Act are not mentioned, but we presume that the protest was directed against section 46 in the consolidating Act, 1925. That section applies where there has been a reconstruction or improvement scheme under section 35, and presumably it was this application of the section which called forth the above protest, but the principle of compensation laid down in that section also applies where a single dwelling house has been found insanitary and past repair under the provisions contained in section 4.

Section 46 has been the subject of adverse criticism from time to time, and it contains some curious provisions.

It applies generally where an improvement or reconstruction scheme has been made under section 35, and it provides that where land has been included in such scheme (other than land included in such scheme only for the purpose of making the scheme efficient and not on account of the sanitary condition of the premises or of those premises being dangerous to or prejudicial to health) the compensation to be paid for the land, including any buildings thereon shall be the value at the time the valuation is made of the land as a site cleared of buildings and available for development in accordance with the requirements of the building by-laws for the time being in force in the district.

Pausing here, it is obvious that this provision is drastic since it not only takes away the property from the owner, but in fact puts upon him the cost of preparing the site for another purpose, since the cost of clearing the site is taken from his compensation. There even appears a trace of the celebrated land taxation principles in the drafting of this section.

The section, however, goes further than this, and here we must set it out verbatim for being in the modern drafting phrascology it does not admit of paraphrase. "Provided that if in the opinion of the Minister it is necessary that provision should be made by the scheme for the rehousing of persons of the working classes on the land or part thereof when cleared, or that the land or part thereof when cleared should be laid out as an open space, the compensation payable to all persons interested in any land included in the scheme (other than as aforesaid) for their respective interests therein shall be reduced by an amount ascertained as follows: (*a*) the value of the whole of the land included in the scheme shall first be ascertained on the basis of its value as a cleared site available for development in accordance with the requirements of the building by-laws in force in the district; (*b*) the value of the whole of the said land shall next be ascertained on the basis of its value as a cleared site subject to the requirements of the scheme as to the provision to be made for the rehousing of persons of the working classes or the laying out of open spaces on the land or any part thereof; (*c*) the difference between the amounts ascertained under paragraphs (*a*) and (*b*) shall then be computed; (*d*) the amount by which the compensation payable for the respective interests in the land to which the foregoing provisions of this section apply, as ascertained in accordance with the principle laid down in those provisions, is to be reduced shall be a fraction thereof equal to the amount arrived at under paragraph (*c*) when divided by the amount arrived at under paragraph (*a*)." Subsection (2) then provides, "subject as aforesaid the compensation to be paid for such land shall be assessed in accordance with the Acquisition of and (Assessment of Compensation Act) 1919," which no doubt refers to land only included in the scheme for the purpose of making the scheme efficient.

It would appear that the intention of the above elaborate provisions is further to limit the compensation. Even a cleared site might be of considerable value in the open market unrestricted as to the purposes to which it might be put, but in assessing the compensation a further deduction is to be made having regard to a restricted object. That is at least how we understand the above very complicated provisions. It has to be remembered that this legislation is not new, although it is now found in the Housing Act, 1925, which is a consolidating Statute. It comes down from the Housing Act, 1919.

We do not know, but possibly when insanitary areas were dealt with the Legislature felt that little sympathy should be extended to the owners of such property and a penal element entered into the provisions as to compensation. Cases were cited at the meeting of the Property Owners' Association where the application of the principle certainly seemed to create at least one hard case, depriving the owner of a forge of his only means of livelihood.

It must be remembered also that in past days large areas were in single ownership and certain owners of these properties certainly made the most out of them without much consideration for their tenants, but times are changing and small ownership is being encouraged, and small owners looking to the future may well wonder whether when their houses cease to be new and in perfect repair their descendants may be liable to be almost deprived of their inheritance under provisions such as the above. The question is a difficult one and therefore to us seems deserving of careful inquiry. The improvement of our slum areas is almost a national question, and care should certainly be taken that individuals are not made to bear an undue share of the burden imposed under improvement schemes. Such associations as the Property Owners' Association should support their case by proving well-attested hard cases imposed not only upon owners, large or small, but on all having any interest in the properties so acquired.

NEW BUILDINGS IN LONDON

Acton.—A further section of the garden village of the Great Western (Acton) Housing Society, Ltd., is in hand. Messrs. Building & Public Works Construction Co., Ltd., builders, Swindon. Mr. T. Alwyn Lloyd, F.R.I.B.A., 6, Cathedral-road, Cardiff, architect to Welsh Housing & Town-Planning Trust.

Battersea.—An additional range of classrooms, &c., are being commenced at the Sir Walter St. John's School, in the Battersea High-street, S.W.8. Messrs. John Willmott & Sons (Hornsey), Ltd., 40, Tottenham-lane, N.8. Mr. A. H. Ryan Tenison, F.R.I.B.A., architect, 21, Great Peter-street, Westminster, S.W.1.

Blomfield-street.—Finsbury Circus House, a large office building in Blomfield-street, E.C.2, has been mainly re-let to a large corporation. Extensive alterations and decorations are in the hands of Messrs. Leslie & Co., builders, Kensington-square, W.

Buckingham Palace-road.—The Victoria branch of the Midland Bank, Ltd., situated at the junction of Victoria-street and Buckingham Palace-road, S.W.1, is to be rebuilt and extended. Plans have been approved, the architects being Messrs. Whinney, Son & Austen Hall, 8, Old Jewry, E.C.2.

Carshalton.—A new United Methodist Church is being erected on a site in Ruskin-road to plans prepared by Mr. Andrew Mather, F.R.I.B.A., 38, John-street, Bedford-row, W.C.1. Messrs. Trollope & Colls, Ltd., builders, 5, Coleman-street, E.C.2.

Chandos-street.—The Chandos Hotel, in Chandos-street and St. Martin's-lane, W.C., is being improved and extended. Messrs. W. A. King & Co., builders, Melbourne-square, S.W.9. Messrs. Aston Construction Co., Ltd., steelwork, Eagle Wharf-road, Hoxton, N.1. Messrs. B. Finch & Co., Ltd., sanitary engineers, 82, Belvedere-road, Lambeth, S.E.1.

Charing Cross.—The contract for construction of new subways and circulating area in connection with the rebuilding of Charing Cross Underground Station has been placed with Messrs. John Mowlem & Co., Ltd., builders, Ebury Bridge-road, Westminster, S.W.1.

City-road.—Plans have been prepared by Mr. P. Morley Horder, F.R.I.B.A., 5, Arlington-street, Westminster, S.W.1, architect to the St. Mark's Hospital, for an extension of the buildings. Estimated cost, £15,000.

Croydon.—Mr. E. H. Smith, builder, 48, Wellesley-road, Croydon, is to build the shop, office and flat premises proposed for the site of No. 27–31, High-street. Mr. E. Bates, architect, 27, Queen Victoria-street, E.C.4.

Croydon.—Plans have been before the authorities for the proposed rebuilding of the "Cricketers" public house in Shirley-road. Mr. S. G. Pailthorpe, architect, 43, Finsbury-square, E.C.2.

Dabbs-hill.—A new station is to be built on the London & North-Eastern Railway line at Dabbs-hill, to plans prepared by the company's engineers, Liverpool-street Station, E.C.2. Mr. John C. Bills, builder, 50, Chapel-road, Forest Gate, E.7.

Dollis-hill.—The extension to the St. Andrew's Hospital, in Dollis-hill-road, N.W.2, will include a new nurses' and maids' homes, new wards, &c. Improvements are also to be made to the existing buildings. Mr. T. H. B. Scott, architect, 11–12, Finsbury-square, E.C.2.

Earls Court.—A company has been registered at Somerset House with the title of the Earl's Court Parent Co., Ltd., and a nominal capital of £25,250, to acquire and develop the property known as the Earl's Court Exhibition.

Fulham.—Messrs. A. Pascall & Son, builders, 1, Down-place, W.6, have a contract in hand for the building of a laundry in Aspenlea-road, W. Mr. R. B. Rowell, A.R.I.B.A., architect, The Triangle, Upper Richmond-road, S.W.

Great Queen-street.—The large block of shop and office property in Great Queen-street, Lincoln's Inn-fields, and Gate-street, W.C., has been recently sold by Mr. J. Trevor, surveyor, 23, Coleman-street, E.C.2, and important developments are in prospect.

Hammersmith.—The Blue Bird Motor Co. (1924), Ltd., 25, Moorgate, E.C.2, propose to build a large motor garage, repair works, showrooms, &c., on a site in Hammersmith-road, W.6. A building to accommodate 1,000 cars will be built.

Hendon.—A large infirmary is being built at Edgware by the Hendon Board of Guardians, with accommodation for 500 beds. Messrs. George Parker & Co., Ltd., builders, 124, Sumner-road, Peckham, S.E.15. Messrs. Paine & Hobday, architects, 45, Bedford-row, W.C.1. Messrs. John Leaning & Sons, quantity surveyors, 28, John-street, Bedford-row, W.C.1. Messrs. Dolby & Williamson, chartered civil engineers, 8, Princes-street, Westminster, S.W.1.

Kingsway.—The London School of Economics and Political Science propose to acquire land and property in Houghton-street, W.C.2, for an extension. Messrs. Trehearne & Norman, Windsor House, Kingsway, W.C.2, architects.

Lambeth.—The London Electric Railways Co. are to build a large semi-automatic substation in Lambeth North, to the plans of their engineers at Electric Railway House, Broadway, S.W.1. Messrs. J. Jarvis & Sons, Ltd., builders, 8, Wormwood-street, E.C.

Lincoln's Inn.—The large hall in New-square, W.C., is being completely reconstructed and restored, including exterior and interior works, fittings, and a new roof.

Long Acre.—Nos. 102–104, Long Acre, W.C., have been secured by Messrs. Dan Windle & Co., Ltd., merchants, Mercer-avenue, Covent Garden, W.C., as an extension of their warehouse premises. Alterations are to be completed by Messrs. Howard & Co., builders, 3, Broad-court Chambers, Covent Garden, W.C.2.

Mayfair.—It is reported that the Egyptian Court are to purchase Bute House, Mayfair, W.1, for use as a Legation. Alterations and redecorations will be carried out.

Millbank.—The first section of the new offices in Smith-square, S.W.1, for the Transport and General Workers' Union, will be completed shortly, when a start will be made with the remaining section. Messrs. Culpin & Bowers, F.R.I.B.A., architects, 27A, Bush-lane, Cannon-street, E.C.4.

Norwood.—A church hall, to cost about £5,000, is to be completed for the parishioners of All Saints' Church, Sydenham, to plans prepared by Messrs. Carõe & Passmore, architects, 3, Great College-street, Westminster, S.W.1.

Oxford-street.—The Hotel York, Ltd., owners of the Berners Hotel in Berners-street, W.1, are to carry out various improvements, including the installation of hot and cold water supplies in all the bedrooms.

Pall Mall.—Marlborough House, S.W.1, is being surveyed with a view to extensive modernisation. Heating and electric lighting, new bathrooms, bedrooms, &c., and other alterations are proposed. Mr. R. J. Allison, C.B.E., F.R.I.B.A., chief architect to H.M. Office of Works, Storey's Gate, Westminster, S.W.1.

Piccadilly.—A large block of shops and flats is to be erected on the site at the corner of Piccadilly and Strutton-street, W.1. Messrs. Holloway Bros. (London), Ltd., builders, Bridge Wharf, Grosvenor-road, S.W.1. Mr. W. Curtis Green, A.R.A., architect, 5, Pickering-place, S.W.1.

Piccadilly.—Mr. Paul Hoffmann, the architect for the Green Park Hotel, Piccadilly, concerning which we published a paragraph in our last issue, writes to say that the particulars given are incorrect. The contract for certain work to the foundations and underpinning has been

COMPARISON OF PRICES OF BUILDING MATERIALS IN JANUARY, 1926, WITH CURRENT PRICES.

Materials.	January, 1926. £ s. d.	February, 1926. £ s. d.	Rise. %	Fall. %
Bricks—				
Best Stocks	4 3 6	4 3 6	—	—
Flettons	2 13 3	2 13 3	—	—
Glazed	21 10 0	21 10 0	—	—
Thames Ballast	0 10 6	0 10 6	—	—
Thames Sand	0 14 6	0 14 6	—	—
Shingle (¾ in.)	0 12 9	0 12 9	—	—
Portland Cement	2 18 0	2 18 0	—	—
Ground Blue Lias Lime	2 4 6	2 4 6	—	—
Grey Stone Lime	2 11 9	2 11 9	—	—
Bath Stone	0 2 9½	0 2 9½	—	—
Portland Stone	0 4 4	0 4 4	—	—
Good Sound Building Timber—				
4 in. × 11 in.	28 0 0	28 0 0	—	—
3 in. × 11 in.	25 0 0	25 0 0	—	—
2 in. × 11 in.	25 0 0	25 0 0	—	—
3 in. × 9 in.	24 0 0	24 0 0	—	—
3 in. × 7 in.	20 0 0	20 0 0	—	—
3 in. × 4 in.	22 0 0	22 0 0	—	—
Slates—				
24 in. × 12 in.	37 12 6	37 12 6	—	—
22 in. × 12 in.	34 0 0	34 0 0	—	—
20 in. × 10 in.	25 12 6	25 12 6	—	—
16 in. × 10 in.	17 12 6	17 12 6	—	—
16 in. × 8 in.	13 15 0	13 15 0	—	—
R.S. Joists	12 10 0	12 10 0	—	—
Iron—				
Common Bars	13 0 0	13 0 0	—	—
Mild Steel Bars	10 0 0	10 0 0	—	—
Steel Bars	10 0 0	10 0 0	—	—
Cut Nails	19 0 0	19 0 0	—	—
Sheet Lead	46 10 0	46 10 0	—	—
Glass—				
15 oz. Sheet	0 0 3½	0 0 3½	—	—
21 oz. Sheet	0 0 4½	0 0 4½	—	—
26 oz. Sheet	0 0 5½	0 0 5½	—	—
Raw Linseed Oil	0 3 6	0 3 1	—	11 90
Turpentine	0 5 10	0 5 6	—	5.71
Ground English White Lead	56 15 0	55 15 0	—	1.76
White Lead Paint	77 15 0	75 15 0	—	2. 7
Red Lead	53 10 0	49 0 0	—	8.41

placed with Messrs. W. H. Lorden & Son, Ltd.; and the steelwork for that work with Messrs. Young & Co., Ltd. The contract for the upper structure has been placed with Messrs. Wm. Willett, Ltd.; and the contract for the steelwork is being settled. The building, when completed, will have about eighty bedrooms on the upper floors; while the ground floor and first floor will contain a restaurant, grill room, lounge, and banqueting room.

Piccadilly-circus.—The Criterion Restaurant, Ltd., Piccadilly and Regent-street, W.1, have in view a large extension of their restaurant premises. Messrs. William Woodward & Sons, 15, Great James-street, W.C.1, architects to Criterion Co.

Putney.—Messrs. Zeeta Co., Ltd., caterers, 11, Young-street, Kensington, W.8, have purchased extensive premises at 200, Upper Richmond-road, S.W., for an enlargement of their Putney tea shop and cafe. Mr. H. L. Cabuche, O.B.E., F.R.I.B.A., architect (Messrs. John Barkers & Co., Ltd., Kensington, W.8).

Regent-street.—It is understood that early developments are in prospect regarding Nos. 177–183, Regent-street, W.1, occupied by Messrs. Vickery & Co., jewellers.

Richmond.—A site in Paradise-road has been secured by the London Maisonettes Company, Ltd., 7, John-street, W.C., for the erection of 12 shops with showrooms over. Messrs. Niven & Wigglesworth, architects.

St. Martin's-lane.—Messrs. T. H. Mansfield & Son, 57, Upper Thames-street, E.C.4, are carrying out alterations and improvements to the premises in St. Martin's-lane, W.C., adjoining the National Bank of South Africa.

Strand.—Additions and alterations are being carried out to 391, Strand, W.C. Messrs. W. Vanstone, Ltd., builders, 61, Chandos-street, W.C.2.

Sutton.—New banking and business premises are to be erected at the junction of Sutton High-street and Cheam-road, to the design of Mr. T. M. Wilson, F.R.I.B.A., architect, 4, Staple Inn, Holborn, W.C. Messrs. Holliday & Greenwood, Ltd., builders, Stewart's-road, Battersea, S.W.

Walworth-road.—A site at No. 218, Walworth-road, S.E., has been secured by Messrs. Edward Mortimer (London), Ltd., for branch showrooms, with suites of flats above. Messrs. North, Robin & Wilsdon, F.R.I.B.A., architects, 35–39, Maddox-street, W.1.

Wapping.—The Stepney Board of Guardians propose to carry out extensive alterations and improvements to their institution, and plans are shortly to be prepared The Clerk is Mr. S. McClelland, Raine-street, Wapping, E.1.

West End.—Messrs. Hammond & Barr, Ltd., builders, 52, Beauchamp-place, Kensington, S.W.3, are negotiating for several sites in the West End upon which it is proposed to build a number of small town houses.

Obituary.

We regret to record the death of Mr. Thomas Potterton, senior partner in the well-known firm of heating engineers, of Cavendish Works, Balham. Mr. Potterton had to his credit the invention and perfection of many of our present-day gas heating devices, and much apparatus. He was one of the founders in 1898 of the Institution of Heating and Ventilating Engineering. The business will be carried on under the same name as heretofore by the two surviving partners.

Society of Engineers.

The Society of Engineers, of 17, Victoria-street, Westminster, S.W.1, has sent us a copy of their quarterly journal, edited by Mr. A. S. E. Ackermann, B.Sc., A.M.Inst.C.E., price 5s. This number contains an article on the influence of aggregates on the strength and properties of concrete, by G. O. Case, A.M.E.I.C.; "The Growth of the Gothic Church Window," by H. E. Irving Taylor, M.A., A.G.G.I., F.L.S.; and "The Renewal of Bridges in England and France during the Great War," by Major V. A. M. Robertson, M.Inst.T.

RATES OF WAGES IN THE BUILDING TRADE

Every endeavour is made to ensure accuracy, but we cannot be responsible for errors.

	Masons.	Brick-layers.	C'rp'ters. Joiners.	Plas-terers.	Slaters.	Plum-bers.	Painters.	Lab'rers.
Aberdare	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Accrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Altrincham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ashton-under-Lyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barnsley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barrow-in-Furness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Barry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bath	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bedford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Birkenhead	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Birmingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bishop Auckland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackburn	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Blackpool	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bolton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Bournemouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bradford	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Brentwood	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Bridgwater	1/5	1/5	1/5	1/5	1/5	1/5	1/5	1/1
Brighton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Bristol	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burnley	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Burton-on-Trent	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Bury	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Cambridge	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Cardiff	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chatham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Chelmsford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Cheltenham	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Chester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Chesterfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Colchester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Coventry	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Crewe	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Darlington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Derby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Doncaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dudley	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Durham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
E. Glam. (Mon. Vall.)	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Eastbourne	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Exeter	1/7	1/7	1/7	1/7	1/7	1/7	1/6	1/2½
Folkestone	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Gloucester	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Grantham	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Grays	1/8½	1/8½	1/8½	1/8½	1/8½	1/8½	1/7½	1/3½
Grimsby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Great Yarmouth	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Guildford	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Halifax	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Harrogate	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hartlepools	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hastings	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/4½	1/0½
Hereford	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Huddersfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Hull	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Ipswich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Lancaster	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leamington Spa	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Leeds	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Leicester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Lichfield	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Lincoln	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Liverpool	1/9	1/9	1/8½	1/9	1/9	1/9	1/8½	1/4
Llanelly	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
London { 12 m. radius	1/9½	1/9½	1/9½	1/9½	1/9½	1/9½	1/8½	1/4½
London { 12–15 m. radius	1/9	1/9	1/9	1/9	1/9	1/9	1/8	1/4
Loughborough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Luton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Maidstone	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Manchester	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Mansfield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Merthyr Tydfil	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Middlesbrough	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newcastle-on-Tyne	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Newport, Mon.	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Northampton	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Norwich	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Nottingham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oakham	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Oldham	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Oxford	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Plymouth	1/8	1/8	1/8	1/8	1/8	1/8	1/7	1/3½
Pontypridd	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Portsmouth	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Preston	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Reading	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Rochdale	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Rochester	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Rugby	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
St. Albans	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
St. Helens	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Scarborough	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/7½	1/2½
Sheffield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Shrewsbury	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
Southampton	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Southend-on-Sea	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Southport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
South Shields	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockport	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stockton-on-Tees	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stoke-on-Trent	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Stroud	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5	1/1½
Sunderland	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swansea	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Swindon	1/6	1/6	1/6	1/6	1/6	1/6	1/5	1/1½
Taunton	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Torquay	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Tunbridge Wells	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/5½	1/1½
Wakefield	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Walsall	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Warrington	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
West Bromwich	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Wigan	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Windsor	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/1½
Wolverhampton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Worcester	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/6½	1/2
York	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½

(For rates of wages in the Building Trade in Scotland, see page 260.)

CONTRACTS, COMPETITIONS, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk are advertised in this number. Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in; the name and address at the end is the person from whom or place where quantities, forms of tender, &c., may be obtained.

BUILDING, PAINTING, ELECTRIC LIGHTING, HEATING, etc.

✱FEBRUARY 6.—**Cardiff.**—COLLEGE.—Completion of Technical College, Cathays Park, for the Cardiff Education Committee. John J. Jackson, Director of Education, Education Offices, City Hall, Cardiff. Deposit £2 2s.

FEBRUARY 8.—**Alnwick.**—COTTAGES.—Six cottages at Hauxley, including roads, sewer, &c., for the R.D.C. H. W. Walton, Clerk.

✱FEBRUARY 8.—**Bletchley.**—COTTAGES.—Sixty-eight cottages, for the U.D.C. W. Charter Wilson, Clerk.

FEBRUARY 8.—**Bolton-upon-Dearne.**—LAVATORIES.—Public urinals, Wath-road and Furlong-road, and lavatories at the Cemetery chapel, for the U.D.C. W. H. Adams, A.R.I.B.A.

FEBRUARY 8.—**Cambridge.**—CONVENIENCES.—Two underground conveniences, for the T.C. G. W. Teasdale, Borough Engineer and Surveyor. Deposit, £2 2s.

FEBRUARY 8.—**Clutton.**—HOUSES.—Sixteen houses at Timsbury, for the R.D.C. Mr. Hawker, architect, Council House, Temple Cloud. Deposit £2 2s.

FEBRUARY 8.—**Dublin.**—REPAIRS.—To Kevin-street Library and Tuberculosis Hospital, Pigeon House-road, for the C.B. J. J. Murphy, Town Clerk.

FEBRUARY 8.—**Dun Laoghaire.**—HOUSES.—Four houses at Library-road, Dun Laoghaire, for the Irish Sailors' and Soldiers' Land Trust. R. E. Beckerson, Chief Clerk, Irish Sailors' and Soldiers' Land Trust, 30, Lower Fitzwilliam-street, Dublin. Deposit £2 2s.

FEBRUARY 8.—**Essex.**—ADDITIONS AND ALTERATIONS.—To the Laindon Hills elementary school, for the C.C. County Architect, Springfield Old Court, Chelmsford. Deposit £1 1s.

FEBRUARY 8. — **Guildford.** — HOUSES. — **Fifty-six** houses on the Aldershot-road estate, for the T.C. J. W. Hipwood, A.M.I.C.E., Borough Engineer, Tuns Gate.

FEBRUARY 8. — **Ossett.** — HOUSES. —Twenty-four scullery-type houses on the Leeds-road site, for the T.C. H. Holmes, Borough Engineer and Surveyor.

FEBRUARY 8.—**Truro.**—BUNGALOW.—Bungalow at Falmouth-road. A J. Cornelius, F.R.I.B.A., architect, Truro.

FEBRUARY 9.—**Glasgow.**—ADDITIONS.—Alterations and additions to car sheds, Broomloan-road, Govan, for the T.C. J. Dalrymple, General Manager, 46, Bath-street.

FEBRUARY 9.—**Newmarket.**—HOUSES.—Erection of 14 pairs, for the R.D.C. A. E. Austin, 4, Hills View, Great Shelford, Cambs.

FEBRUARY 9. — **Oxted (Surrey).** — HOUSES. — Erection of four Class "A" and sixteen Class "B," at Red-lane site, Limpsfield, for the Godstone R.D.C. Sydney F. Evershed, L.R.I.B.A., Lloyds Bank Chambers, Oxted. Deposit £3 3s.

FEBRUARY 9.—**Saddleworth.**—SCHOOL.—New school at Saddleworth Diggle, for the West Riding E.C. Education Department, County Hall, Wakefield.

FEBRUARY 9.—**Surrey.**—BATHS AND GEYSERS.—Provision and fixing of baths and geysers in five cottages at the Mayford School, near Woking, Surrey, for the L.C.C. Architect to the Council, the County Hall (Room No. 3), Westminster Bridge, S.E.1.

FEBRUARY 9. — **Swinton.** — ADDITIONS. — Additions and alterations to Swinton Kilnhurst Council School, for the West Riding E.C. The Education Department, County Hall, Wakefield.

FEBRUARY 9.—**West Derby.**—BUILDING, &c.—At the Belmont-road Institution, for the B.G. E. B. Bailey, L.R.I.B.A., 9, Cook-street, Liverpool.

FEBRUARY 9.—**West Riding.**—BUILDING.—For (1) Erection of new conveniences at Otley North Parade Council school, and (2) proposed alterations at Baildon Sandal Council school, for the E.C. Education Department, County Hall, Wakefield.

FEBRUARY 10.—**Clonmel.**—BUILDING.—Completion of the front of SS. Peter and Paul's Church, Clonmel, for the Rev. Dean Walsh, Ashlin & Coleman, architects, 7, Dawson-street, Dublin. Deposit, £3 3s.

✱FEBRUARY 10.—**Kingston-on-Thames.** — REPAIRS AND MATERIALS.—Artificers' works contract from March 9, 1926, Contract 2, Kingston-on-Thames Area, including Hampton Court Barracks. Commanding Royal Engineer, Woolwich District, Royal Engineer Office, New-road, Woolwich.

FEBRUARY 10.—**Preston.**—CONVENIENCES.—Underground conveniences at the junction of North-road, Walker-street, and Park-road, for the C.B. Borough Surveyor.

FEBRUARY 10.—**Rotherham.**—CONVERSIONS.—Conversion of privies, &c., to water closets and the construction of new w.c. buildings at Swallownest (200) and Catcliffe (100), for the R.D.C. C. O. Rawstron, engineer and surveyor. Deposit £1 1s. each.

FEBRUARY 10.—**Southwell.**—BUILDING.—Erection and completion of new infirmary at the Workhouse, Upton-road, for the B.G. Sands & Walker, Milton Chambers, Milton-street, Nottingham. Deposit, £3 3s.

FEBRUARY 10.—**Tilbury.**—ENLARGEMENT.—Of the Upper Ward elementary school, for the Essex C.C. Jno. Stuart, F.R.I.B.A., County Architect, Springfield Old Court, Chelmsford. Deposit £1 1s.

FEBRUARY 11.—**Birmingham.**—HEATING.—Installation of heating and hot-water services in a separate block at the Dudley-road Hospital, for the B.G. Edwards & Shaw, consulting engineers, 105, Colmore-row. Deposit, £3 3s.

FEBRUARY 11.—**Cilfynydd.**—PAVILIONS.—Pavilions, sanitary accommodation, &c., with appurtenant works, for the Cilfynydd Welfare Association. Haydn M. R. Burgess, A.R.I.B.A., 77, Taff-street, Pontypridd.

FEBRUARY 11.—**Cork.**—TRADES.—For (1) heating, (2) plumbing, and (3) electric wiring of Roche's Stores new premises, 13-17, Patrick-street, Cork. Chillingworth & Levie, 11, South-mall, Cork.

FEBRUARY 11.—**Glasgow.**—HALL.—Works required in connection with the proposed erection of the new Kelvin Hall, for the T.C. J. Lindsay, Town Clerk. Deposit, £10 10s.

FEBRUARY 11.—**Glasgow.**—HOUSES.—288 houses at Govanhill, for the T.C. J. Lindsay, Town Clerk.

FEBRUARY 11.—**Largs.**—BUILDING.—New Post Office, for H.M. Office of Works. Architect, H.M. Office of Works, 122, George-street, Edinburgh. Deposit, £1 1s.

FEBRUARY 11.—**Rochford.**—HOUSES.—Thirty houses, for the R.D.C. A. C. Madge, surveyor, Rayleigh. Deposit, £1 1s.

FEBRUARY 11.—**Swindon.**—PREMISES.—New premises, Bridge-street, for the Co-operative Provident Society. R. J. Beswick & Son, A.R.I.B.A., 10, Victoria-road. Deposit, £1 1s.

FEBRUARY 12.—**Glasgow.**—HOUSES.—177 houses at Bellahouston, for the T.C. J. Lindsay, Town Clerk.

FEBRUARY 12.—**Leeds.**—PAINTING.—Inside painting of blocks 1, 2, and 3 of the Institutions at Beckett street, for the B.G. J. H. Ford, Clerk to the Guardians' Poor Law Offices, 11, South Parade.

✱FEBRUARY 12.—**Nottingham.**—HOUSES.—Erection of 132 houses of the smaller type on the Colwick-road estate (Lund's Allotments), for Housing Committee of the Corporation. The City Engineer, Guildhall. Deposit £1.

FEBRUARY 13.—**Crowfield.**—HOUSE.—At Crowfield, for the East Suffolk Constabulary. C. Oakes, Clerk to the East Suffolk Standing Joint Committee, County Hall, Ipswich.

FEBRUARY 13.—**Folkestone.**—HOUSES.—Six houses and nine pairs of flats on the Canterbury-road housing site, for the T.C. A. E. Nichols, Borough Engineer, 11, Church-street. Deposit £3 3s.

FEBRUARY 13.—**St. Faith's.**—COTTAGES.—Four at Wroxham, four at Sprowston, four at Swannington, for the R.D.C. A. F. Scott & Sons, AA.R.I.B.A., 24, Castle Meadow, Norwich.

FEBRUARY 13.—**Westhampnett.**—HOUSES.—Fifty-four houses on the Council's sites, Lavant, and on the Chichester to Arundel-road, near Balls Hut Inn, Walberton, for the R.D.C. W. D. Rasell, Clerk to the Council, Council Offices, Pallant House, Chichester.

✱FEBRUARY 13.—**Wrexham.**—ELEMENTARY SCHOOL.—Erection of, at Rhos-on-Sea, Colwyn Bay, for the Denbighshire Education Authority. W. D. Wiles, County Architect, Acton Hall, Wrexham. Deposit £1 1s.

FEBRUARY 15.—**Brighton.**—HOUSES.—Erection in brick of about 200 houses on the Beershop Field housing site, for the Corporation. D. Edwards, M.Inst.C.E., F.S.I., Engineer and Surveyor, Town Hall, Brighton. Deposit £1.

FEBRUARY 15.—**Cheadle and Gatley.**—SUB-STATION.—Sub-station building, for the U.D.C. Electrical Engineer and Manager, 37, High-street. Deposit £1 1s.

FEBRUARY 15.—**Chesterfield.**—HOUSES.—Thirty-five houses on St. Augustine's-avenue site, for the T.C. W. A. Derbyshire, architect, Gluman Gate. Deposit £1 1s.

FEBRUARY 15. — **London.** — DWELLINGS. — Erection of three blocks of dwellings on the Hornsey Rise estate, Hazelville-road, Islington, for the L.C.C. Architect to the Council, The County Hall (Room No. 3), Westminster Bridge, S.E.1. Deposit £2, to the Cashier.

FEBRUARY 15.—**London.**—STORE BUILDING.—Construction (in brick and steel) of a new store building at the car repair depot, Woolwich-road, Charlton, S.E., for the L.C.C. Architect to the Council, The County Hall (Room No. 3), Westminster Bridge, S.E.1. Deposit £2 2s., to the Cashier.

FEBRUARY 15.—**Merthyr Tydfil.**—INSTITUTE.—Institute for the Blind at junction of Swan-street and Pond Side, for the C.B. Borough Architect.

FEBRUARY 15.—**Poplar.**—FLATS.—Erection of 24 flats on a site in St. Leonard's-street, for the Metropolitan B.C. Borough Surveyor, Council Offices, High-street, Poplar, E.14. Deposit £3 3s.

FEBRUARY 15.—**Stevenage.**—HOUSES.—Five houses in Walkern-road, for the U.D.C. R. A. Gandy, engineer and surveyor. Deposit £2 2s.

FEBRUARY 15. — **Truro.** — HOUSES. — Erection of blocks of workmen's dwelling houses, [distributed] as follows:—At St. Erme (four), Merther (four), Cuby (two), Kea (two), Ruantanihorne (four), Gerrans (four), for the R.D.C. H. L. Butler, architect, 39, Edward-street. Deposit £1 1s.

FEBRUARY 15.—**Truro.**—ADDITIONS.—To hall at the rear of the Truro and District Unionist Working Men's Club, Lemon-street, Truro. A. J. Cornelius, F.R.I.B.A. architect.

FEBRUARY 15.—**Windsor.**—HOUSES.—Erection of twelve parlour-type houses, including fences, paths, &c., on the building site at Bagshot-road, Sunninghill, for the R.D.C. W. Menzies, F.S.I., Englefield Green, Surrey. Deposit £1 1s.

FEBRUARY 15.—**Windsor.**—HOUSES.—Erection of twelve parlour-type houses, including fences, paths, &c., on the building site at Church-road, Old Windsor, for the R.D.C. W. Menzies, F.S.I., Council's Architect, Englefield Green, Surrey. Deposit £1 1s.

FEBRUARY 16. — **Bethnal Green.** — HOSPITAL WARDS.—Erection of Receiving and Casualty Wards, at the Bethnal Green Hospital, Cambridge-road, E. 2, for the Guardians. C. Faulkner Jones, Clerk to the Guardians, Administrative Offices, Bishop's-road, Bethnal Green, E. 2. Deposit £3 3s.

FEBRUARY 16. — **Bournemouth.** — PAVILION. — Superstructure contract of the new pavilion in the Pleasure Gardens, for the County Borough Council. Herbert Ashling, Town Clerk, Town Hall. Deposit £2 2s.

FEBRUARY 16.—**Hoylandswaine.**—HEATING.—Installation of heating apparatus at the Council school, for the West Riding E.C. Education Department, County Hall, Wakefield.

FEBRUARY 16. — **Wealdstone.** — CONVENIENCE. — Public sanitary convenience and a motor ambulance station in Peel-road, for the U.D.C. H. Walker, surveyor. Deposit £1.

FEBRUARY 17.—**Ballymena.**—BUILDING.—New premises at Church-street and Bryan-street, for Hipps, Ltd. J. P. M'Ardle, architect and civil engineer, Ulster Bank Chambers, 4, Ann-street, Belfast. Deposit £5 5s.

FEBRUARY 17.—**Pentire.**—HOUSE.—Residence at Pentire, Newquay, Cornwall. A. J. Cornelius F.R.I.B.A., architect, Truro.

✱FEBRUARY 17.—**Perth.**—HOUSES. — Tender for various trades in the erection of 17 blocks comprising 68 three-apartment houses and eight blocks comprising 16 four-apartment houses—84 houses in all—on a site at Pitheavlis, off Needless-road and Darnhall-drive, for the Town Council. Thomas McLaren, Burgh Surveyor, Borough Surveyor's Office, 16, Tay-street, Perth. Deposit £1 for each Schedule.

FEBRUARY 17.—**Wallingford.**—HOUSES.—Six houses at Long Wittenham, and six houses at West Hagbourne, for the R.D.C. Messrs. J. G. T. West & Son, architects, The Knowl, Abingdon, Berks.

FEBRUARY 18.—**Kilkeel.**—ADDITIONS.—Alterations and additions to existing building intended as district hospital, at Kilkeel, co. Down, for the B.G. R. Marchant, quantity surveyor, 2, Wellington-place, Belfast. Deposit, £2 2s.

FEBRUARY 19.—**Ireland.**—COTTAGES.—For 40 in Belfast Rural District; 4 in Carrickfergus Rural District; 16 in Bangor Rural District; 12 in Holywood Rural District; 6 in Lisburn Rural District; 12 in Larne Rural District; 4 in Ballymena Rural District; 2 in Portrush Urban District; 10 in Strabane Urban District; 4 in Omagh Urban District; 14 in Dungannon Urban District; 10 in Enniskillen Urban District, for the Government of Northern Ireland. W. R. Maconkey, Assistant Secretary, Ministry of Finance, Belfast. Deposit £5.

✱FEBRUARY 19.—**Surrey.**—SCHOOL.—Erection of a Central School at Richmond, for the Richmond Education Committee. Evill & Hadland, surveyors, 67, George-street, Portman-square, W.1. Deposit £2 2s.

FEBRUARY 20.—**Bridgend.**—PREMISES.—Shop premises at Bridgend, for the Dunraven Lodge of Oddfellows. P. J. Thomas & Son, A.R.I.B.A., architects and surveyors, Court-road.

FEBRUARY 20.—**Halifax.**—ABATTOIRS.—New public abattoirs, for the C.B. Borough Engineer, Crossley-street. Deposit £2 2s.

✱FEBRUARY 20.—**Wallington, Surrey.**—HOUSES.—Erection and completion of 40 houses on the Miller's Orchard site, Beddington Corner, for the Beddington and Wallington U.D.C. S. F. R. Carter, A.M.Inst.C.E., Engineer and Surveyor of the Council, Council Offices, Deposit £2 2s.

FEBRUARY 21.—**Southend.**—NEW WING.—To be erected to the Public Library, and works incidental thereto, for the Corporation. R. H. Dyer, Engineer, Municipal Building, Southend-on-Sea. Deposit, £2.

FEBRUARY 22. — **London District.** — ORDINARY WORKS AND REPAIRS.—To the buildings in their charge in the London District during the period of one year from April 1, 1926, for the Commissioners H.M. Office of Works. Contracts Branch, King Charles-street, London, S.W.1. Deposit £2 2s. (Cheques payable to the Commissioners.)

FEBRUARY 22.—**Manchester.**—HEATING.—Heating installation (low-pressure hot-water system) High-street depot, for the T.C. H. C. Lamb, Manager, Electricity Department. Deposit £1 1s.

FEBRUARY 23.—**Epsom.**—BUILDING.—Erection of additions to the Union Hospital and Nurses' Home, situate at Dorking-road, for the Guardians of the Epsom Union. A. C. Williams, Ashley-road. £2 2s.

FEBRUARY 23.—**Sefton.**—COTTAGES.—Six in Victoria-road, Ince Blundell, 12 in Runnell's-lane, Sefton, for the R.D.C. E. B. Bailey, architect, 9, Cook-street, Liverpool. Deposit £1 1s.

✱FEBRUARY 23.—**Watford.**—HOUSES.—Erection of 26 houses on the Wiggenhall estate, Watford, for the Corporation. W. W. Newman, A.M.I.C.E., F.S.I., Borough Engineer, Municipal Offices, 14, High-street Watford. Deposit £2 2s., payable to the Borough Treasurer.

FEBRUARY 24. — **Leith, Edinburgh.** — REINFORCED CONCRETE WORK.—Provision and erection of a new grain warehouse and silos of reinforced concrete adjoining the East Quay of the Edinburgh Dock for the Leith Dock Commission. Alfred H. Roberts, M.Inst. C.E., Superintendent and Engineer, Dock Offices, Tower-place, Leith. Deposit £15, additional copy £2.

FEBRUARY 26.—**Long Eaton.**—HOUSES.—Fourteen non-parlour houses in Wellington-street, for the U.D.C. H. Raven, architect. Deposit, £5 5s.

✱MARCH 2.—**Bristol.**—POLICE AND FIRE BRIGADE PREMISES.—Erection of new premises, Bridewell-street, for the Watch Committee of the Council. Bernard & Sons, quantity surveyors, 26, Orchard-street, Bristol. Deposit £5 5s., payable to the City Treasurer.

MARCH 3.—**Ongar.**—COTTAGES.—Four cottages at Stanford Rivers, for the R.D.C. P. Pearce, building surveyor. Deposit, £1 1s.

MARCH 4.—**St. Thomas.**—HOUSES.—Four houses at Whimple, near Exeter, for the R.D.C. R. M. Challice & Son, architects and surveyors, 7, Bedford-circus, Exeter.

NO DATE.—**Midlothian (Calder).**—HOUSES.—Seventy houses, for the D.C. A. G. G. Asher, W.S., District Clerk, County Rooms, Edinburgh.

NO DATE.—**Portsmouth.**—SUB-STATIONS.—Sub-stations at Titchfield, Westbourne, and Hayling, for the T.C. B. Handley, engineer and manager, High-street.

MATERIALS, etc.

FEBRUARY 8.—**Hendon.**—MATERIALS.—Broken granites, limestone, hoggin, shingle, &c., tarred macadam, tarpaving and repairs to tarpaving, castings, for the U.D.C. A. O. Knight, engineer and surveyor.

FEBRUARY 8.—**Ilford.**—MATERIALS.—Granite macadam, chippings, &c., tarpaving, Portland cement, lime, iron castings, for the U.D.C. H. Shaw, engineer and surveyor.

FEBRUARY 8.—**London.**—STORES, &c.—Supply of stores, &c., for the period of twelve months commencing April 1, 1926, for the Metropolitan Water Board, Chief Engineer, Metropolitan Water Board, 173, Rosebery-avenue, E.C.1, by personal application (Room 156), or upon forwarding a stamped addressed brief envelope.

FEBRUARY 8.—**Wangford.**—GRANITE.—1,255 tons of granite, 1,340 tons of gravel, 115 tons of fine gravel, and 115 tons of shingle, for the R.D.C. S. W. Rix, Clerk, Beccles.

FEBRUARY 8.—**Weymouth.**—MATERIALS.—Granite, basalt, limestone, refined tar, other surface dressing materials, for the R.D.C. A. J. W. Haxworth, surveyor.

FEBRUARY 9.—**Frimley.**—MATERIALS.—Castings, sanitary pipes, agricultural pipes, &c., granite and chippings, tar compounds, tar-macadam, kerbing, &c., for the U.D.C. H. Fox Hill, surveyor, Camberley.

FEBRUARY 9.—**Gillingham.**—MATERIALS.—Road materials, Portland cement and lime, requisites for precipitation works, stoneware pipes, &c., timber, sewer ironwork, bricks, paints, oils, and varnish, for the T.C. J. L. Redfern, Borough Engineer and Surveyor.

FEBRUARY 9.—**London.**—MATERIALS.—Paving materials, tar and road spraying materials, cement and lime, ironmongery, iron castings, for the Deptford B.C. A. Purkis, Town Clerk, Deptford Town Hall, New Cross, S.E.14.

FEBRUARY 10.—**Belfast.**—MATERIALS.—Iron, iron castings, cement and alabaster, &c., for the Belfast and County Down Railway. H. E. Mellor, Secretary, Queen's Quay Terminus, Belfast.

FEBRUARY 10.—**Cardiff.**—MATERIALS.—Sand and gravel, Portland cement, paints, varnishes, &c., sanitary and rainwater goods. City Engineer.

FEBRUARY 10.—**Colne.**—MATERIALS.—Lancashire and local setts, curbs and channels, Portland cement, distilled tar, granite setts, granite macadam, limestone macadam, lime, earthenware pipes and gullies, iron-work, street grates, manhole and lamphole covers, for the T.C. T. H. Hartley, Borough Engineer and Surveyor.

FEBRUARY 10.—**Gainsborough.**—MATERIALS.—Broken granite and whinstone macadam, slag and limestone macadam, broken and block slag, slag chippings and dust, granite and whinstone setts, York setts, kerbs, channels and flags, concrete flags and kerbs, crushed gravel, earthenware pipes, gullies, &c., British Portland cement, for the U.D.C. Sam. W. Parker, engineer and surveyor.

FEBRUARY 10.—**London.**—MATERIALS.—Tarred slag macadam and tar-paving, asphalte, bitumen, &c., tar for tar-spraying, Thames ballast, sand and shingle lime and cement, bricks, stoneware pipes, granite, York stone paving slabs, artificial stone paving slabs and plumber's work, for the Hammersmith B.C. Borough Engineer and Surveyor.

FEBRUARY 10.—**Middlesex.**—MATERIALS.—700 tons of 2 in. machine-broken Clee Hill granite, and ¼ in. granite chippings, 2,750 tons of clean granite chippings for tar-painting work, also for 2,750 tons tarred slag macadam, for the C.C. A. Dryland, County Engineer, County Engineer's Department, Middlesex Guildhall, Westminster, S.W.1.

FEBRUARY 10.—**New Sarum.**—MATERIALS.—Iron castings, sanitary pipes, Portland cement, refined tar, bitumen for road spraying, for the T.C. City Engineer and Surveyor, Endless-street, Salisbury.

FEBRUARY 10.—**Rhondda.**—FENCING.—385 yds. of wrought-iron unclimbable fencing, for the U.D.C. E. Taylor, engineer and surveyor, Council Offices, Pentre.

FEBRUARY 10.—**Richmond (Surrey).**—MATERIALS.—Flints and crushed shells, ballast, gravel and uncrushed shingle, York and granite kerb and flagging, artificial stone paving, tarred macadam (slag or lime-stone), deal blocks, plumbers', painters' and glaziers' work, bricklayers', masons', &c., work, carpenters' work, cement, and grey lime, for the T.C. J. W. Trodd, Borough Engineer and Surveyor.

FEBRUARY 10.—**West Lothian (Bathgate District).**—PIPES, &c.—520 tons of 12 in. dry sand cast-iron pipes and special castings, for the Water Works. J. & A. Leslie & Reid, C.E., 72A, George-street, Edinburgh. Deposit £1.

FEBRUARY 11.—**Belfast.**—METAL WINDOWS.—Supply of for the new Museum and Art Gallery in Botanic Gardens Park, for the Libraries, Museums and Art Committee. Town Clerk's Office, City Hall.

FEBRUARY 11.—**Irlam.**—MATERIALS.—Sewer and drain pipes, granite setts and chippings, kerbs, concrete flags, pitch and oil, tar-macadam, grit setts, broken stone and limestone chippings, iron castings, cement, for the U.D.C. Engineer and Surveyor.

FEBRUARY 11.—**Leyton.**—MATERIALS.—Lime, cast-iron manhole and lamphole covers, gully grates, and other sewerage iron-work, blue Guernsey broken granite for road metalling, granite setts and scoriae blocks, granite kerb, granite chippings, patent stone paving, Thames ballast (unscreened), for the U.D.C. Engineer and surveyor.

FEBRUARY 11.—**London.**—MATERIALS.—Sewer castings, stoneware drain pipes, stock and Fletton bricks, timber, ballast, sand, gravel, &c., broken granite, York and Lancashire stone and artificial paving, kerb and paving setts, Portland cement, grey lime, creosoted deal blocks, for the Lambeth B.C. O. Cattlin, Chartered Civil Engineer, Borough Engineer, Town Hall, Brixton Hill, S.W.2.

FEBRUARY 12.—**Dunstable.**—MATERIALS.—2 in., 1½ in., and ½ in. tarred slag, dry slag, slag chippings, granite chippings, dehydrated tar, for the T.C. W. F. Wilkins, Borough Surveyor.

FEBRUARY 12.—**Thirsk.**—MATERIALS.—Whinstone, slag, and tarred slag, &c., for the R.D.C. J. W. Lupton, Surveyor.

FEBRUARY 13.—**Bedfordshire.**—MATERIALS.—Broken granite, slag, gravel, for the C.C. County Surveyor, Shire Hall, Bedford.

FEBRUARY 13.—**Bootle.**—MATERIALS.—Cement and lime, common bricks, earthenware pipes and gullies, manholes and gulley grates, timber, for the C.B. Borough Engineer.

FEBRUARY 13.—**Cornwall.**—MATERIALS.—Bitumen, refined tar and compounds, roadstone, tarred macadam, for the C.C. E. H. Collcutt, County Surveyor, County Hall, Truro.

FEBRUARY 13.—**Darlington.**—MATERIALS.—Cement, sanitary pipes, common field pipes, bricks, stone gripes, water grates, tar, fencing, road materials, for the R.D.C. Surveyor, Union Offices.

FEBRUARY 13.—**East Riding of Yorkshire.**—MATERIALS.—Tarred slag, dry slag, whinstone chippings, pitching limestone, concrete kerb, refined tar, for the C.C. County Surveyor, County Hall, Beverley.

FEBRUARY 13.—**Halifax.**—MATERIALS.—Paving, setts, flags, kerb, &c., granite and limestone chippings, Portland cement, gravel and sand, earthenware pipes, &c., granite paving setts, artificial flags, tar-macadam, tar, bituminous spraying compounds, &c., for the C.B. Borough Engineer.

FEBRUARY 13.—**Horsforth.**—MATERIALS.—Granite, limestone, tarred slag and tarred limestone, refined tar, tar-spraying compounds or bitumen, for the U.D.C. J. E. Aldersley, surveyor.

FEBRUARY 13.—**Isle of Ely.**—MATERIALS.—Tar-macadam, broken granite, and iron slag, for the C.C. R. S. W. Perkins, County Surveyor, Lynn-road, Wisbech, Cambs.

FEBRUARY 13.—**Westmorland.**—TAR.—230,000 gallons of refined tar, for the C.C. Chas. E. Hines, County Surveyor, County Surveyor's Office, 12, Lowther-street, Kendal.

FEBRUARY 15.—**Birkenhead.**—MATERIALS.—Granite and Rawtenstall kerbs and channels, macadam stone, natural flags, concrete flags, granite paving setts, Portland cement, iron castings, wrought iron, stoneware, pipes, creosote oil, pitch, tar, for the Corporation. C. Brownridge, Borough Engineer and Surveyor.

FEBRUARY 15.—**Diss.**—MATERIALS.—Tar-macadam, broken granite and clean chippings, 16,000 gallons of refined tar, for the U.D.C. A. Cooper, surveyor.

FEBRUARY 15.—**Eccles.**—MATERIALS.—Stoneware and earthenware pipes, gullies, &c., manhole, lamp-eye covers and frames, gully grates and frames, &c., for the T.C. Borough Surveyor.

FEBRUARY 15.—**Gosport.**—MATERIALS.—Tar, bitument, &c., stoneware pipes, &c., macadam, cement, lime, castings, ironmongery, drysalteries, paints, &c., for the T.C. E. J. Goodacre, chartered civil engineer.

FEBRUARY 15.—**Haslingden.**—MATERIALS.—Limestone and chippings, Welsh granite, rubble, kerbs, setts, flags, red bricks, sanitary pipes, iron castings, Portland cement, lime, disinfectants, for the T.C. R. Taylor, Borough Surveyor.

FEBRUARY 15.—**Northamptonshire.**—MATERIALS.—Tarred macadam, broken granite, and gravel; tar; surface dressing of various main roads, for the C.C. E. A. Black, County Surveyor, County Hall.

FEBRUARY 15.—**Shoreham-by-Sea.**—GRANITE.—200 tons of 2½ in. broken granite and 75 tons of ½ in. granite chippings, for the U.D.C.—A. W. Nye, Town Surveyor.

FEBRUARY 15.—**Southport.**—MATERIALS.—Bricks, vitrified tiles, Portland cement, and lime; road materials: Granite, limestone, kerbs, channels, flags, lump and broken stone, tarred granite and limestone macadam, slag, granite, concrete flags, &c.; salt glazed vitrified stoneware socket-jointed pipes, junctions, gullies, &c.; iron castings (manhole covers, special castings, &c.), smithy iron and rainwater goods, &c.; plumbers' goods, lead pipe, and glass, &c., for the C.B. A. E. Jackson, Borough Engineer and Surveyor.

FEBRUARY 15.—**Waltham Holy Cross.**—MATERIALS.—Granite, flints, gravel, hoggin, ballast, and sand, tar-macadam, tar-spraying, for the U.D.C.—W. C. Holloway, engineer and surveyor.

FEBRUARY 16.—**North Riding of Yorkshire.**—MATERIALS.—Road stone (whinstone, slag, limestone, tarred macadam, &c.), tar and bituminous mixtures, for the C.C. County Surveyor, County Hall, Northallerton.

FEBRUARY 17.—**Hove.**—MATERIALS.—Artificial stone paving slabs, Portland cement, stoneware drain pipes, broken granite, Coombe rock flints, refined gas tar, tarred slag macadam, for the T.C. W. Jermyn Harrison, Town Clerk.

FEBRUARY 17.—**Hove.**—STORES, &c.—Supplying various stores and for supplying on hire such horses, carts, and drivers as may be required in scavenging, rolling, and watering roads and streets, carting materials, and other works, supplying and executing street masonry and jobbing works, for the Borough Council. Borough Surveyor's Office, Town Hall, Hove.

FEBRUARY 17.—**Leeds.**—LIME.—1,500 tons rich burnt lime, for the T.C. G. A. Hart, Sewerage Engineer.

FEBRUARY 17.—**Liverpool.**—MATERIALS.—Iron, mild steel and cast steel, files, paving setts, curbs and channel stones, Yorkshire flags, guardstones, &c., Lancashire flags, setts, curbs, &c., cement, macadam, &c., gravel, glazed pipes, junctions, &c., bricks, pitch and creosote oil, for the T.C. W. Moon, Town Clerk.

FEBRUARY 17.—**London.**—MATERIALS.—Broken granite, kerbing, &c., ballast and sand, lime and cement, drain pipes, for the Fulham B.C. J. P. Shuter, Town Clerk.

FEBRUARY 17.—**London.**—MATERIALS.—Road materials, tar-paving and patent stone, castings, for the Greenwich B.C. Borough Engineer, Town Hall, Greenwich, S.E. 10.

FEBRUARY 18.—**London.**—MATERIALS.—Artificial stone footway pavement slabs, broken granite, lime and bricks, Norwegian granite footway kerb and pitching, plumbing work and materials, Portland cement, road materials—flint, gravel and hoggin, stoneware sewer and drain pipes, invert blocks, &c., tar-paving, tarred slag macadam, Thames ballast and sand, timber, wood paving blocks, ironwork for sewers and iron castings, for the St. Marylebone B.C. L. Gordon, Town Clerk, Town Hall, St. Marylebone, N.W.1.

FEBRUARY 19.—**Acton.**—MATERIALS.—Broken granite, artificial stone paving, tar, for the B.C. Wm. Hodson, Town Clerk, Municipal Offices, Acton, W.3.

FEBRUARY 19.—**Finchley.**—MATERIALS.—Crushed shingle, Guernsey granite chippings, for the U.D.C. T. Harrison, engineer and surveyor, 9, The Hawthorns, Regents Park-road, Finchley, N.3.

FEBRUARY 20.—**Belfast.**—MATERIALS.—Bricks, fire-bricks, cement, road metal, sand, &c., stoneware, glazed stoneware conduits, glazed stoneware cable bridges, for the Corporation. J. Wright, City Electrical Engineer and Manager, East Bridge-street.

FEBRUARY 22.—**Maldens and Coombe.**—MATERIALS.—Refined tar, broken road metal, kerbing and gravel, stoneware goods, tar-macadam and tar-paving, Portland cement, lime, for the U.D.C. J. Wm. Johnson, Clerk of the Council.

FEBRUARY 23.—**Doncaster.**—MATERIALS.—Tar macadam, broken slag, whinstone chippings, &c., for the R.D.C. W. R. Crabtree, surveyor, Nether Hall.

FEBRUARY 27.—**Earby.**—MATERIALS.—Granite, limestone, tarred slag, and refined tar, &c., for the U.D.C. L. H. Poole, surveyor.

✱MARCH 1.—**Battersea.**—STORES AND MATERIALS.—Tenders are invited from contractors and others for materials and stores for the Borough Council. The Clerk, Town Hall, Lavender Hill, S.W.11.

ENGINEERING, IRON AND STEEL.

FEBRUARY 8.—**Worcester.**—TANK.—Construction in reinforced concrete of a new pure water tank, at the Worcester Waterworks, for the T.C. T. Caink, City Engineer.

FEBRUARY 9.—**Smethwick.**—WIDENING.—Of Spon-lane bridge, and the reconstruction and widening of the bridge over the L.M.S. Railway's main line, and the widening of the bridge over the goods line in brickwork and steel, together with brick retaining and parapet walls, and all incidental works, for the C.B. R. Fletcher, Borough Engineer and Surveyor. Deposit £5 5s.

FEBRUARY 10.—**Chipping Norton.**—RESERVOIR.—Concrete reservoir, pumping station, for the R.D.C. A. T. Green, surveyor, Enstone-road, Charlbury, Oxon. Deposit £2 2s.

FEBRUARY 12.—**Bakewell.**—RESERVOIR.—Construction of concrete service reservoir and the providing, laying and jointing of about 5,400 lineal yards of 4, 3, and 2 in. cast-iron pipes, with all necessary valves, hydrants, and other work incidental thereto, in the parish of Eyam, for the R.D.C. Brady & Partington, Chartered Civil Engineers, Market-street, Chapel-en-le-Frith. Deposit £5.

FEBRUARY 12.—**Penarth.**—WIDENING.—Of the Esplanade, for the U.D.C. Edgar I. Evans, engineer and surveyor. Deposit £5 5s.

✱FEBRUARY 13.—**Liverpool.**—(*a*) General building contract—new abattoirs; (*b*) steelwork contract—new abattoirs, for the Corporation of Liverpool. Land Steward and Surveyor, Municipal Buildings, Liverpool.

FEBRUARY 15.—**Carriston.**—RESERVOIR.—Construction of a new storage reservoir, together with incidental and relative works, off a site adjoining the existing reservoir, for the Wemyss and District Water Works Committee. Crouch & Hogg, chartered civil engineers, 17, Lynedoch-street, Glasgow. Deposit £3 3s.

FEBRUARY 15.—**Hanchurch.**—RESERVOIR.—Construction of a 6 million gallon reservoir of mass concrete partly reinforced, for the Staffordshire Potteries Water Board. R. C. Frain, Engineer and General Manager, Albion-street, Hanley, Stoke-on-Trent. Deposit £5.

FEBRUARY 15.—**London.**—COVERING.—Covering the roof (area about 7,040 sup. yds.) of Barrow Hill reservoir, St. Edmund's-terrace, Regent's Park, N.W. 8, with granolithic compound, together with contingent works, for the M.W.B. H. E. Stilgoe, Chief Engineer, 173, Rosebery-avenue, E.C. 1. Deposit £5.

FEBRUARY 20.—**Manchester.**—WIDENING.—Of Hulme Hall-lane bridge over the Rochdale Canal, Newton Heath, for the T.C. City Engineer. Deposit £3 3s.

FEBRUARY 22.—**Aberdeen.**—STEELWORK.—290 tons of structural steelwork, corrugated iron sheeting, &c., forming an extension of the boilerhouse at their Ferryhill power station, for the T.C. The City Electrical Engineer, Milburn-street, Aberdeen. Deposit £2 2s.

FEBRUARY 23.—**Watford.**—ENGINEERING WORK.—Laundry machinery, water softener, electric lighting, central heating plant in sections at the Institution, 60, Vicarage-road, for the Guardians of the Watford Union. Masters' Office at the Institution, or at the Consulting Engineer's Office, 39, Carlton-road, Putney S.W.15. Deposit £2 in notes for each section.

FEBRUARY 24.—**East Lothian.**—BRIDGE.—New steel bridge over the River Tyne on the East Linton bye-pass road, for the C.C. P. Clarke, Dunbar, Surveyor. Deposit £3 3s.

MARCH 1.—**Scarborough.**—RESERVOIR.—Concrete Service Reservoir on Spring Hill, for the C.B. Dr. H. Lapworth, 25, Victoria-street, Westminster. Deposit £5.

MARCH 2.—**Dublin.**—TUNNEL.—Under the River Liffey, for the C.B. J. Murphy, Town Clerk. Deposit £1 1s.

ROAD, SEWERAGE, AND WATER WORKS.

FEBRUARY 8.—**Evesham.**—ROADS.—Construction of roads and sewers on the Briar Close housing site, for the T.C. J. Abbott, Borough Surveyor. Deposit £2 2s.

FEBRUARY 8.—**Hendon.**—MAKING-UP.—Golder's Manor-drive, Heather-gardens Sinclair-grove, Western-avenue, Basing-hill, Newcombe-park, Lawrence-court, and Goodwyn-avenue, for the U.D.C. A. O. Knight, engineer and surveyor. Deposit £5.

FEBRUARY 8.—**Lennoxtown.**—SEWERS.—Laying of about 4,900 lin. yds. of 15 in., 12 in., 9 in., and 6 in. diameter fireclay (or concrete) sewers, and about 200 lin. yds. of 12 in. diameter steel sewer, together with other relative work, all within the Lennoxtown special drainage district, for the Stirlingshire C.C. Warren & Stuart, engineers, 94, Hope-street, Glasgow. Deposit £1 1s.

FEBRUARY 8.—**Newquay.**—PAVING.—Sewering, levelling, paving, metalling, kerbing, and channelling, and other works in the construction of St. George's-road, for the U.D.C. A. C. Bedington, engineer. Deposit £3 3s.

FEBRUARY 8.—**Ogmore and Garw.**—IMPROVEMENTS.—For (*a*) road widening and improvement scheme at Lewistown, and (*b*) construction of a bowling green on the Caedu Recreation Ground, for the U.D.C. W. T. Ollivant Jones, engineer and surveyor, Council Offices, Brynmenyn, Glam.

FEBRUARY 9.—**Featherstone.**—ROAD.—**Making** of roads, and laying of sewers and water mains, in connection with the erection of the second section of 50 houses on the Council's housing site at Streethouse, for the U.D.C. Samuel Cheaney, A.R.I.B.A., surveyor. Deposit £2 2s.

FEBRUARY 9.—**Mitcham.**—SEWERS.—For (*a*) extension of sewer at Commonside East, Mitcham (approximate length 616 yards); (*b*) extension of sewer at Tamworth-lane, Mitcham (approximate length 160 yards), for the U.D.C. S. Chart, Clerk.

FEBRUARY 9.—**Northwich.**—MAINS.—Laying of about 21 miles of 5 in., 4 in., and 3 in. cast-iron distribution water mains and a quantity of galvanised water tubes, together with service branch connections and the raising of a water tower tank, in Acton, Anderton, Barnton, Cogshall, Comberbach, Crowton, Little Leigh, and Weaverham, for the R.D.C. J. Birtwistle, engineer, Bank Chambers, Winnington-street. Deposit £3 3s.

FEBRUARY 9.—**Tendring.**—REPAIRS.—Private street works in Una-road, Parkeston, Ramsey, for the R.D.C. F. G. Vincent Brown, Surveyor, Cliff-road, Dovercourt Bay.

FEBRUARY 10.—**Birkenhead.**—MAINS.—Laying of about 2,600 lineal yds. of 20 in. diameter and about 600 lineal yds. of 18 in. diameter cast-iron and steel water mains, including special castings, valves, meter, wash-outs, and other works in connection therewith, for the T.C. R. F. Baker, water engineer, 52, Balls-road. Deposit £2 2s.

FEBRUARY 10.—**Farnworth.**—ROADS.—Roads and sewers in Harper Green, for the U.D.C. F. Ashton, surveyor. Deposit £2 2s.

FEBRUARY 10.—**Thurso.**—RESURFACING.—Re-surfacing, grouting, surface-sealing, kerbing and channelling Class I streets, for the T.C. Cameron Sutherland, County Road Surveyor, Wick. Deposit £2 2s.

FEBRUARY 10.—**Twickenham.**—REPAIRS.—For (*a*) taking down existing wall and railings, the erection of a new wall, railings and entrance gates; (*b*) widening, forming, levelling, kerbing, paving, and making good of a portion of Richmond-road, for the U.D.C. F. W. Pearce, surveyor. Deposit £1 1s.

FEBRUARY 11.—**Bushey.**—SEWERS.—Construction of roads and sewers on the Clapgate Farm estate, 530 lin. yds. of roads and footpaths, 480 lin. yds. of 9 in. soil sewers, 340 lin. yds. of 9 in. s.-w. sewers, for the U.D.C. E. E. Ryder, surveyor. Deposit £2 2s.

FEBRUARY 11.—**Leeds.**—PAVING.—Paving, tar-macadamising and flagging in Arley-place, also for kerbing, paving, tar-macadamising and laying of tar paved footpaths in Middleton Park-avenue, also for kerbing Dewsbury-road, for the T.C. Highways Engineer, 1, Swinegate, Leeds. Deposit £1 1s.

FEBRUARY 12.—**Bishopthorpe.**—SEWER.—Providing and laying of 70 lineal yards of 6 in. stoneware sewer, together with manhole in connection therewith and connecting to junction manhole at Dringhouses, for the R.D.C. Fairbank & Son, M.Inst.C.E., Chartered Civil Engineers, of Lendal Chambers, York. Deposit £1 1s.

FEBRUARY 12.—**Leeds.**—SEWER.—Sewer ironwork and galvanised iron dirt boxes, for the T.C. W. T. Lancashire, City Engineer.

FEBRUARY 13.—**Birmingham.**—SEWERS.—Construction of about 580 yd. of brick and concrete sewers in Bristol-road South, from Lickey-road to Sandy Hill estate, for the T.C. H. Humphries, City Engineer and Surveyor. Deposit £2.

FEBRUARY 16.—**Brentford.**—SEWER.—For (*a*) the construction between Gunnersbury-lane and the River Thames of a 48 in. concrete outfall sewer, manholes, and other works, for the U.D.C. Engineer and Surveyor. Deposit £3 3s.

FEBRUARY 16.—**Wallasey.**—PIPES.—Leading and laying of approximately 3,000 lin. yds. of cast-iron water main pipes, 20 in. internal diameter, together with specials, valves and other apparatus, for the C.B. J. H. Crowther, manager and engineer, Gas Works, Limekiln-lane.

FEBRUARY 17.—**Leyton.**—SEWER.—Construction of the main outfall sewer between Leyton and Hackney, to connect with the main drainage system of the L.C.C. The works comprise approximately 1,800 yds. of 48 in. and 230 yds. of 36 in. internal diameter brick and concrete sewers, 150 yds. of 48 in. diameter and special cast-iron pipe sewers, together with lengths of stoneware pipe sewers, manholes, bell-mouth and storm overflow chambers, Venturi Meter and Recording Chamber, river and canal crossings, laying approximately 2,350 yds. of electric and telephone cable, and other incidental works, for the U.D.C. A. P. Howell, Engineer, Town Hall, Leyton, E. 10. Deposit £10.

FEBRUARY 17.—**Stockport.**—ROADS.—Excavating, sewering, forming, paving, curbing, and flagging Sussex-road, Lorland-road, Hythe-road, Merton-road, passages Nos. 1 and 2, Sussex-road, and passage 3, Hythe-road, for the C.B. Borough Surveyor.

FEBRUARY 18.—**Manchester.**—DRAINAGE.—Draining the building site of the new gasworks at Partington, for the T.C. J. H. Sillitoe, Secretary, Gas Department.

FEBRUARY 22.—**Knutsford.**—SEWERS.—Laying about 8,900 lin. yds. of 27 in., 24 in., 21 in., 18 in., 15 in., 12 in., 9 in. and 6 in. sewers, with the necessary manholes, flushing chambers and storm overflow; bridge over brook; taking up and relaying certain existing sewers; sewer crossings under railway; the construction of screening chambers, detritus tanks, gauge basin, hydrolytic tanks, dosing chamber, percolating filters, humus tanks, stormwater tanks, sludge drying beds, diversion of brook course, fencing and laying out of land for irrigation at Birkin Brook, Mobberly, for the U.D.C. Taylor & Wallin, engineers, Commercial Union Buildings, 47, Pilgrim-street, Newcastle-on-Tyne. Deposit £5.

FEBRUARY 22.—**Lytham Saint Anne's.**—SEWER.—Construction of about 2 miles of 48 in. diameter reinforced concrete main intercepting sewer and about ¼ of a mile of 54 in. cast-iron main outfall sewer, together with manholes, ventilating shafts, and other appurtenant works, for the T.C. G. W. Lawson, Borough Engineer and Surveyor. Deposit £5.

FEBRUARY 23.—**Dunfermline.**—SEWER.—Construction of about 700 lineal yards of brick-built main outfall sewer, chiefly in tunnel, from a point west of Elgin Bleachworks to Bothwell-street, for the T.C. Crouch & Hogg, C.E., 17, Lynedoch-street, Glasgow. Deposit £2 2s.

FEBRUARY 23.—**Pontefract.**—WORKS.—Certain street works in Anderson-street, back Anderson-street East, back Anderson-street North-West, back Anderson-street South-West, Victoria-street, back Victoria-street, and back Front-street, for the T.C. Borough Engineer. Deposit £2 2s.

FEBRUARY 24.—**Rawmarsh.**—ROAD.—Forming a new 80 ft. wide roadway, a new low-level roadway, also kerbing, channelling, and flagging, &c., surface water drainage, manholes, and gullies; the excavation of about 180,000 cubic yards of material through a hill, and depositing in the adjoining valley of Warren Vale, to form new road gradients, and erection of a reinforced concrete bridge and culverts, and incidental work, for the Rawmarsh U.D.C. and the Swinton U.D.C. J. A. Tonge, Engineer to the Rawmarsh U.D.C., Council Offices, Parkgate. Deposit £3.

NO DATE.—**Lanark.**—SEWERAGE.—Construction of various schemes of sewerage and sewage disposal works, comprising the construction of fireclay pipe sewers, sewage tanks, filters, and other relative works, for the Middle Ward of the C.C. W. L. Douglass, District Engineer, Clydesdale-street, Hamilton.

Competitions.

(*See Competition News page* 222.)

Auction Sales, Tenders, etc.

FEBRUARY 9.—**Feltham (Middlesex).**—Henry Butcher & Co. (*re* late Whitehead Aircraft Co.'s Works), having disposed of the major portion of the property, will sell, at Feltham, power plant, engineering and building material. Auctioneers, 63 & 64, Chancery-lane, London, W.C. 2.

✱FEBRUARY 9. — **Shepherds Bush.** — Veryard & Yates will sell the following without reserve, by order of the National Council of Y.M.C.A. huts, Hammersmith Infirmary, timber and building materials arising from demolition. — FEBRUARY 16. — **London.** — Without reserve, at 255, Clapham-road, stock of excellent timber, fittings and building materials.—FEBRUARY 17.—**Crawley.**—Without reserve, at rear of White Hart Hotel, useful timber, fittings and building materials.—FEBRUARY 18.—**Surrey Commercial Docks.**—Without reserve, at Nos. 4 and 5, Granaries, Norway Yard, Surrey Commercial Docks, useful timber, &c., arising from demolition of timber-built granaries. Auctioneers, 365, Norwood-road, S.E.27.

✱FEBRUARY 15.—**Hayes, Middlesex.**—F. H. Clark will sell, without reserve, at Hayes, Middlesex (adjoining G.W. Railway Station), important clearing auction sale of Government surplus second-hand timber and fittings recovered from demolition of temporary Government buildings. Admiralty, Arch, Whitehall. Auctioneers, Hayes, Middlesex.

FEBRUARY 16 AND 17.—**Doncaster.**—Perry & Phillips will sell, at Sprotsborough Hall, the whole of the interior and exterior fixtures and fittings in and about the property, previous to the demolition of the mansion. After this sale the fabric of the mansion will be sold for demolition. (The owner is prepared to sell building sites in the Park.) Auctioneers, High-street, Bridgenorth.

✱FEBRUARY 23.—**Cheam, Surrey.**—J. T. Skelding & Co. will sell, without reserve, on the premises *re* H. Heather-Coy, Ltd., in liquidation, by order of the Liquidator, Walter Boniface, Esq., F.C.A., at Cheam, Surrey, immediately adjoining Cheam Station (down side), Southern Railway, stock plant of the above firm of builders and decorators. Auctioneers, 48, Gresham-street, Guildhall, E.C.2.

FEBRUARY 23. — **London.** — Hampton & Sons will sell (in conjunction with G. E. Sworder & Sons), at the St. James' Estate Rooms, 20, St. James'-square, S.W. 1 (unless previously sold), in one or five lots, freehold residential property known as "Westfield House." Bishops Stortford, with vacant possession, together with building land, Auctioneers, 20, St. James'-square, S.W. 1.

✱MARCH 3.—**Twickenham.**—Nightingale, Page & Bennett, in conjunction with John D. Wood & Co., will sell, on the premises, Orleans House, fitments of this historical mansion, handsome Georgian return staircase in oak, &c. Auctioneers, N. P. & B., Eagle Chambers, Kingston-upon-Thames and Claremont House, Surbiton, and J. D. W & Co., 6, Mount-street, W.1.

MARCH 5. — **Norwich.** — Messrs. Spelman have received instructions from the executors of the late Mr. E. W. D. Potter to sell, at the "Royal Oak," Norwich, in lots: (1) Freehold property, stone-mason's yard, with office and house, as a going concern; (2) stabling; and (3) house and gardens. Auctioneers Norwich and Great Yarmouth.

MARCH 9. — **London.** — W. W. Howard Bros. & Co., in conjunction with Joseph Hibbard & Sons. Public sale will take place by order of the Government of Burma, in the Small Hall, Winchester House, Old Broad-street, London, E.C.2, without reserve, of stock of Burma hardwoods laying at Crown Wharf, Canning Town, London, E., and Tower Wharf, Southampton. Auctioneers, 18, Newington Green, Islington, London, N.16.

Public Appointments.

FEBRUARY 8.—**Crewe.**—Town-Planning Assistant in the Borough Engineer's and Surveyor's Department required by the B.C. E. G. Timbrell, B.Sc., A.M.I.C.E., Municipal Buildings, Crewe.

FEBRUARY 8. — **Johannesburg.** — LECTURER. — To act as Head of the Department of Art and Architecture required at the Witwatersrand Technical Institute. The Secretary, Office of the High Commissioner for the Union of South Africa, South Africa House, Trafalgar-square, W.C. 2.

✱FEBRUARY 8.—**Nottingham.**—Clerk of Works required in the City Engineer's Department by the Corporation. W. J. Board, Town Clerk, Guildhall, Nottingham.

✱FEBRUARY 9.—**Alton, Hants.**—Clerk of Works required in connection with the erection of a new Infirmary at the Poor Law Institution at Alton, by the Guardians. J. Arthur Smith, architect, Cross-street, Basingstoke.

FEBRUARY 9.—**Manchester.**—Clerk of Works in connection with the erection of the new hospital at Davyhulme, near Manchester, required by the Guardians of the Barton-upon-Irwell Union. The Clerk, Union Offices, Green-lane, Patricroft, Manchester.

FEBRUARY 10. — **Battersea.** — Superintendent of Building Works required to work under the Borough Engineer and Surveyor, by the Borough Council. Borough Surveyor, Town Hall.

✱FEBRUARY 26.—**Belfast.**—Architect, highly qualified and thoroughly experienced, required by the Education Committee to devote the whole of his time to the duties of the office. R. Meyer, Town Clerk, City Hall, Belfast.

✱FEBRUARY 26.—**Bermondsey.** — District Surveyor for the district of Bermondsey required by the L.C.C. Clerk to the Council, The County Hall, Westminster Bridge, S.E.1.

✱IMMEDIATE.—**Sierra Leone.**—Quantity Surveyor required for the Public Works Department for two tours of 12–18 months' service. Age 28–35 years. The Crown Agents for the Colonies, 4, Millbank, Westminster, S.W.1, quoting M/14277.

✱NO DATE. — **London.** — (*a*) Instructor in Painting and Decorating for five hours per week; (*b*) Instructor in Plumbing for five hours per week required by the Middlesex Education Committee at the Willesden Polytechnic Building School. B. S. Gott, Middlesex Education Committee, 40, Eccleston-square, S.W.1.

✱NO DATE. — **London.** — Clerk of Works capable of supervising, setting out and erection of a large central school at Chiswick, for the U.D.C. Apply at once, Fredk. Fernihough, Clerk, Town Hall, Chiswick, W.4.

Pink Concrete Street.

The Malden and Coombe Urban District Council has completed a concrete street with a pink-coloured surface, in order that it may harmonise with the paving stones, which are of a reddish colour.

Canadian Building Construction.

Canadian construction contracts for November, as compiled by MacLean Building Reports, totalled $46,972,800, as compared with $29,647,500 in October, and $24,614,200 in November a year ago. For the fourth successive month the totals have exceeded those for last year, culminating in November by an increase of 90.8 per cent. over the same month a year ago. Contemplated new work reported in November aggregated $37,549,200. Totals now stand at $285,297,700 for the first eleven months of 1925, and for the same period of last year $247,393,300, showing an increase so far of 15.3 per cent. over 1924. The grand total for twelve months of last year is already exceeded by over nine million dollars.

PROPOSED NEW BUILDINGS & OTHER WORKS*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works at the time of publication have been actually commenced. Abbreviations: T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; B.G. for Board of Guardians; B.C. for Borough Council; P.C. for Parish Council; M.H. for Ministry of Health; M.T for Ministry of Transport: C.B. for County Borough: B.E. for Board of Education; M.A.B. for Metropolitan Asylums Board; and M.W.B. for Metropolitan Water Board.

ARMAGH.—The Regional Committee has adopted a report recommending that a new school be erected to accommodate 800 children at an estimated cost of £20,000.

ARMLEY.—The Armley Skating Rink Co. has decided to carry out a scheme for the conversion of the skating rink buildings in Ayres-avenue, Armley, into a dance hall, cafe, and concert hall.

ATHLONE.—The U.D.C. proposes to erect twenty cottages at £300 each.

BECKENHAM.—Land on the Kent House estate is to be purchased for the erection of an infants' school. Further consideration is to be given to proposals for acquiring land on the Rectory estate for the erection of municipal offices, a site in Church-avenue being recommended. Land on the Clock House estate is to be purchased for the erection of educational or other public buildings. It is proposed to provide a floor at the baths, at a cost of £1,550. A billiard room is to be constructed at the Beckenham Conservative Club. Plans passed: 20 houses, Kent House-road; 26 houses, Churchfields-road.

BECONTREE.—Messrs. F. W. Romain & Sons are to erect 14 shops in Green-lane.

BELFAST.—The Celtic Football Club are to have a covered stand erected to provide accommodation for 8,500. The structure will be of steel and reinforced concrete, and will cost £10,000.

BERWICK.—There is a probability of the erection of a sugar beet factory. A factory of the size required will cost about £130,000.

BILLINGHAM.—The U.D.C. is seeking permission to erect a further 100 houses, and also for sanction to borrow £1,787 for the purchase of 13¼ acres of land in Mill-lane for housing purposes.—The Council has provisionally approved the lay-out of land which will permit of the erection of 160 houses.

BILSTON.—The E.C. propose to erect two new schools.

BIRKENHEAD.—The Watch Committee has selected a site at the southern district for the erection of a police station. Plans have been prepared for the erection of conveniences at Victoria Park. The Borough Engineer has prepared plans for erecting 92 flats on the Dell estate at a cost of £46,323. On behalf of Dawson Birkenhead Houses, Ltd., Messrs. Mills & Milnes have prepared plans for the erection of 48 houses in Townsend-road.

BIRMINGHAM.—Plans have been prepared by Messrs. Douglas G. Tanner and Arthur L. Horsburgh, A.R.I.B.A., Great Western Buildings, Livery-street, Birmingham, for the erection of a new public-house on a site at Orley, served by Salt & Co., Ltd., brewers.

BISHOP'S STORTFORD.—Plans are to be prepared by the Herts. E.C. for a school for 320 children.

BOLTON.—The T.C. passed plans: W. Gornall & Sons, Ltd., for amended plan of 18 houses, Fortonavenue; Wm. Gornall & Sons, Ltd., for amended plans of 14 houses, Forton-avenue; Housing Committee, for 18 blocks of four flats, Union-road estate; A. S. Woods, for 10 houses, Cromdale-avenue; Leigh Bros., Ltd., for 12 houses, Tenby-avenue, and 12 houses, Sutherland-road.

BOROUGHBRIDGE.—A new school with accommodation for 270 children is to be erected.

BOWERS-ALLERTON.—A start is being made with the foundation works of the proposed new chapel at Bowers-Allerton, near Castleford. The estimated cost of the chapel is about £4,000. Messrs. R. A. Easedale & Son, of Castleford, are the architects.

BRADFORD.—Plans have been prepared for the erection of a Primitive Methodist church at Horton Bank, Great Horton-road.

BRIGHTON.—The Borough Surveyor has presented a plan for improving the public lavatory on the sea front at the western boundary, at an estimated cost of £300, and the C.B. resolved that the plan be approved, and that the Borough Surveyor be authorised to carry out the work at an estimated cost of £300.—The Council recommend that the plan prepared by the Borough Surveyor for laying out the site with gardens, including a tea hut and shelter, at an estimated cost of £6,700, be approved, subject to the M.H. sanctioning the necessary loan.—The M.H. has sanctioned the borrowing of £100,000 for the purchase of property for purposes of street improvements; £13,050 for the purchase of the North Brighton estate, and £10,330 for the purchase of 205, 206 and 210, Western-road; £55,600 for the purchase of 150–156, Western-road: £910 for the erection of a caretaker's house at the Secondary School for Girls, and £4,500 for purchase of leasehold interest, &c., in 186, Western-road.—The C.B. approved the Borough Surveyor's estimate for the cost of painting the various bathing shelters on the beach and the 12 bathing cabins on the Madeira-drive at £167.—The Borough Surveyor estimated the cost of carrying out the necessary repairs to the roof of the swimming bath at £465. The C.B. resolved that the Borough Surveyor be authorised to carry out the work.

BRISTOL.—An inquiry has been held into the Corporation's proposal to erect at Portishead a station for the generation of electricity.

BROOKWOOD.—The Surrey C.C. are considering the provision of a reception hospital at the asylum.

CAMBRIDGE.—New buildings at King's College, comprising additional accommodation for the library and students' quarters above. Messrs. Kennedy & Nightingale, 31, Oakley-street, Chelsea, architects. The quantity surveyors, Messrs. L. A. Francis & Sons, Vernon House, Sicilian-avenue, W.C.2.

CARLISLE.—The Housing Committee of the City Council has decided to ask the M.H. to sanction another 100 houses of the "parlour type," on the Longsowerby estate.

CARSHALTON.—Surrey E.C. are acquiring a site for the erection of an elementary school.

CHEAM.—Approval has been given to plans for the new bridge to carry the Sutton by-pass road over the Southern Railway at Hales.

CHELTENHAM.—Application is to be made to the M.H. for sanction to a loan of £28,095 for the estimated cost of erecting the 22 pairs of houses.

CLAYTON (WAKEFIELD).—The Governors of the Clayton Hospital are urging the erection of new hospital accommodation, including 50 additional beds at the hospital. Mr. W. H. Watson, of Barstow-square, Wakefield, is architect to the Governors.

COVENTRY.—It is proposed to construct a ferro-concrete bridge over the L.M. & S. Railway level crossing, at a total estimated cost of £55,000.

DEPWADE.—The M.H. has stated that, subject to satisfactory tenders being obtained, the Minister will approve provisionally the proposal to undertake the erection of 44 houses.

DERBY.—The C.C. propose extensions to the County Mental Hospital, and additional land is to be purchased for £2,900.

DONCASTER.—The Salvation Army have purchased a site in Trafford-street upon which to build a meeting hall to seat over 600 persons.

DORKING.—The Surrey E.C. are negotiating for another site for the erection of a secondary school for girls.

DOVER.—A site at Shatterlock has been purchased for the erection of an elementary school.—The Corporation are urging the Southern Railway Co. to proceed with the scheme for the reconstruction of Priory Station.—A site at St. James-street has been secured for the erection of a convenience. Repairs to houses on the Buckland estate are to be carried out at a cost of £1,800.—On behalf of the Corporation Mr. H. A. Steele, architect, has prepared plans for the erection of flats on the Astor estate.—The Borough Engineer has prepared a scheme for dealing with the Finnis Hill slum area.—Detailed plans are to be forwarded to the Ministry of Health for the reconstruction of the isolation hospital, the estimated cost being £10,000.

DUBLIN.—The Port and Docks Board has directed the law agent to report on the steps necessary to get powers to reconstruct and widen Butt Bridge.

DUDLEY.—The Housing Committee recommend that the lay-out plans for the erection of 20 and 48 houses on the Belper-row and Church-road sites respectively, be approved, and that tenders be obtained.

DUKINFIELD.—The T.C. are proposing to build twenty houses on the Cumbermere-street site.

DUNDEE.—Plans and sections of proposed new buildings, &c., have been lodged at the Office of the City Engineer: Lawton-road, houses, for the T.C. (plans by Housing Director); and Maitland-street, church hall, for the Rev. Canon Malcolm (architect, R. Fairlie, Edinburgh).

EASTBOURNE.—A new ball-room is to be constructed at the Moston Hotel.—Steps are to be taken to obtain possession of the site at Seaside for the erection of a branch library.—A site at Hampden Park is suggested for the erection of a reading room.—The Corporation are being urged to proceed with the scheme for the erection of a fire station in Victoria-drive.—The Southern Railway Co. has prepared plans for improvements at the railway station.

EBBW VALE.—The Great Western Railway Co. are to build new carriage sheds and other works at the junction near Newport, Mon. Plans have been prepared by the company's engineers at Paddington Station, W.2.

EDMONTON.—The U.D.C. has instructed the Engineer to prepare a report and estimate for the erection of an additional 500 houses by direct labour at the Hyde Estate. The scheme is estimated to cost £453,800.

FOLKESTONE.—Sanction of the M.H. to the borrowing of £2,170 for the erection of public conveniences in Pleydell-gardens, Cheriton-road and Foord-road has been received by the T.C.—The Council recommend the erection of a wall at the Cheriton-road entrance to the Sports Ground.—The T.C. is to build a £6,800 pavilion on the new cricket ground.

GOOLE.—The B.E. has sanctioned a scheme of extensions at the St. Joseph's Roman Catholic Day Schools, in accordance with plans prepared by the Education Committee's architect. Increased accommodation is to be provided for 310 mixed scholars and 140 infants.

GREAT HARWOOD.—The lay-out plans have been submitted to the D.C. for the erection of 260 cottages near Harwood-lane, for Mr. Parker, Barnoldswick; and 150 houses near Harwood Bar, for Mr. Yates, of Blackburn.

HEMEL HEMPSTEAD.—The Herts E.C. are to acquire a 9-acre site for the erection of a secondary school for about 400 scholars.

HODDESDON.—The Herts E.C. has authorised the preparation of plans for the erection of an elementary school for 450 children in Burford-road.

HOYLAND.—The Surveyor presented a plan for conveniences at Platts Common, and the U.D.C. recommended that these be approved and that he be instructed to prepare an estimate of the cost.

HUDDERSFIELD.—Plans have been prepared by the West Riding C.C. for extensions at the Girls' Secondary School, at an estimated cost of £17,185. The plans have been approved by the B.E. An improvement to the existing school buildings is to be effected by the installation of electric lighting, at an estimated cost of £380.

ILFORD.—Plans passed by the U.D.C.: Suburban Developments (London), Ltd., 103 houses; J. W. Davies, 27 houses, 35–59, Littlemore-road and 281–307, Hampton-road; H. Higinbotham, amended block plan of houses, 161–179, 225–235 and 96–112, 124–166, Eton-road, and 33–109, 152–160, Staines-road; F. W. Hitchcock, 13 houses and five garages, 127A, 129–151, Breamore-road; J. W. Lohden, 24 houses, 1–47, Benton-road.

ISLE OF WIGHT.—The Governors of the Royal Isle of Wight County Hospital, at Ryde, have under consideration the rebuilding of the old central portion of their premises.

KINGSTON.—The Tiffin Boys' School Governors have prepared plans for new buildings to cost £41,500. Provision is made for a gymnasium and swimming and shower baths.

KIRKHAM (LANCS).—A new electricity reducing station is to be erected.

KNUTSFORD.—The U.D.C. has received sanction from the M.H. to carry out an extensive scheme of sewerage to cost over £60,000.

LEEDS.—A factory is to be erected in Elland-road by the Butchers' Casing Co., Cattle Market. Plans have been prepared by Braithwaite & Jackson, 6, South-parade.

LEICESTER.—The E.C. are urging for the adoption of the scheme for the extension of the College of Art and Technology.

LIVERPOOL.—Plans have been approved for the construction of Adelphi Garage, to accommodate 100 cars, with lock-ups and supply facilities.—Public Utility Society proposes to erect about twenty or thirty houses.

LLANILAR.—The Aberystwyth R.D.C. has prepared a scheme for the erection of a bridge over the River Ystwyth, at a cost of £550.

LONDON (BATTERSEA).—The B.C. has received from the L.C.C. formal sanction to the borrowing of £4,000 for the erection of a tuberculosis dispensary; the M.H., formal consent to the borrowing of £4,570 in respect of the provision of a maternity centre in Latchmere-road.—Application is to be made to the L.C.C. for sanction to a loan of £4,154 in respect of the third block of tenements, Plough-road Improvement Scheme.—The B.C. recommend that no objection be offered to the following building notices: Holliday & Greenwood, Ltd., for a goods shed and milk platform at the South Lambeth Depot (G.W. Rly.), Battersea Park-road; the B.C., for a maternity and child welfare centre and tuberculosis dispensary in Latchmere-road.

LONDON (BERMONDSEY).—The B.C. recommend that application be made for a loan of £26,500 for the erection of 29 houses on the Salisbury-street site and 33 permanent houses outside the area.

LONDON (HACKNEY).—The Electricity Commissioners have sanctioned the borrowing of £6,400 for extensions at the Dalston-lane sub-station.—Plans passed: A. J. King, Ltd., factory, Downham-road.

LONDON (POPLAR).—The B.C. are to make alterations at the engineers' shop, at a cost of £450.

LONDON (STEPNEY).—The B.C. recommend that application be made for sanction to borrow £242,750, for an electricity scheme.—The B.C. also recommend that £75,300, representing the cost of the acquisition of a site in St. George-in-the-East and the erection thereon of buildings and provision of equipment for use as a sub-station in connection with the Council's Electricity Supply Undertaking, be adopted.—The Council recommend that £2,353 for the housing scheme at White's-row and Bell-lane be approved.

LONDON (WESTMINSTER).—The City Council recommend that, subject to the submission of estimates by the Finance Committee, the Buckingham Palace-road Library be reconstructed and remodelled.—The L.C.C. has sanctioned the borrowing of £16,712 for the purpose of the erection of depot buildings and a rate collectors' office in Drury-lane.

LONDON COLNEY.—The Herts E.C. has acquired a 4-acre site for the erection of an elementary school.

LONGBRIDGE.—The U.D.C. has received the sanction of the M.H. to erect 43 houses on the Wheatsheaf estate.

LUTON.—The T.C. has approved plans and specifications of two proposed new handicraft centres. Application is to be made to the B.E. and M.H. for sanction to the borrowing of £1,670, £1,500 for the buildings and £170 for furnishing.

MALDENS AND COOMBE.—A scheme for building concrete flats for the working classes has been adopted by the U.D.C.

MALTBY.—The U.D.C. has decided to build the 36 new Council houses by contract.

MANCHESTER.—The Corporation propose an expenditure of £188,000 for the acquisition of land at Moston and the erection of 300 houses. An expenditure of £189,500 is proposed for land and the erection of 306 houses at Gorton. Land at Burnage is being acquired at a cost of £44,000 for a housing scheme.—The T.C. passed plans: Twenty-four houses, Belgrave-road and Beaumont-road, Chorlton-cum-Hardy; 16 houses, Athol-road and King's-road, Withington; 12 houses, Royston-avenue and Whalley-road, Moss Side.

MITCHAM.—Revised plans for the new secondary school for girls has been forwarded by the Surrey E.C. to the B.E. The cost is estimated at £33,200.

NEWPORT (MON).—The Borough Architect reported upon a suggestion that covered communication should be provided between Wards 3 and 4, and submitted a plan showing the extension of an existing verandah. The C.B. approved the estimated cost of carrying out the work, at £250.—The Council approved the building work required in connection with the installation of mechanical filtration at the Public Baths, by direct labour.—The C.B. recommend that the contract be entered into for the proposed erection of ten flats

* See also our List of Contracts, Competitions, etc.

or maisonnettes, on a site at the rear of Maindee Police Station, for the purpose of police quarters.—The C.B. propose to restore the retaining wall alongside a portion of Riverside at a cost of about £25,000.

NOTTINGHAM.—The M.H. held an inquiry into the Corporation's application to borrow the sum of £29,000 for the purpose of building public baths in Noel-street.

OLDHAM.—The Borough Engineer has prepared a scheme for the erection of 304 houses on the Barrowshaw and Greenacres estates.

OXFORD.—The Oxford Electric Co., Ltd., have in contemplation the erection of an additional story to their transformer houses in Kemp Hall-yard, to plans prepared by F. H. Francis, engineer.

OXTED.—The Surrey E.C. has now approved sketch plans for the erection of a mixed secondary school, the cost being estimated at £30,000.

PENRITH.—The R.D.C. has received sanction to erect 50 houses.—A committee has been formed to encourage the industrial development of the town. The U.D.C. has arranged for the building line of new premises to be erected by Barclays Bank, Ltd., in the market-square

PLYMOUTH.—The Borough Surveyor has submitted plans for the erection of flats as follows: Battery-street, 15 flats; land, the Royal William Victualling Yard, 54 flats. The C.B. resolved that the plans be approved.—The Great Western Housing Society are proposing to build 86 houses.—The C.B. has received from the M.H. sanction to the erection of transformer chambers.—The Borough Surveyor submitted a report and estimate of £450 for providing a ladies' convenience in Devonport-Park.—The Borough Surveyor has submitted revised plans for 206 houses at Higher Mount Gould, and which the C.B. approved. Tenders are to be invited.—The Borough Surveyor submitted a scheme for the enlargement of the bathing facilities at the Tinside Bathing Place and the C.B. recommend that the scheme be generally approved, and that the first section of the scheme, viz., the provision of additional dressing accommodation, at an estimated cost of £13,250, be commenced. Application is to be made to the M.H. for sanction to borrow the sum of £13,250 for the work.—It is proposed to carry out an enlargement of Plymouth College, including the building of new laboratories, at an estimated cost of £7,000. The designs have been prepared by the architect to the governors, M. A. Bazely, 22, Princes-square.

RAMSBOTTOM.—Application has been made to the M.H. for sanction to borrow £16,680, in connection with the proposed erection of twenty-eight additional houses by the D.C. on the housing site at Edenfield.

REIGATE.—The Borough Engineer is to prepare a scheme for the provision of a destructor.—The Borough Engineer is to prepare estimates for a scheme for the erection of baths and a police station on the Redhill site.

ROTHERHAM.—The Housing Committee recommend the Council to accept a tender of £30,420 for the erection of 72 houses at Eastdene.—The Council recommended that the Town Clerk be instructed to enter into preliminary negotiations with owners of certain building sites on the western side of the town for the erection thereon of 500 additional houses.—Mr. C. Broadhead, architect, Devonshire House, Moorgate, has prepared plans, specifications and quantities for extensions at the Badsley Moor-lane Council School for the E.C.

ROYSTON.—Extensions at the infants' school are to be undertaken by the Herts E.C., at a cost of £350.

ST. HELENS.—The negotiations for the acquisition of a site for the establishment of an artificial silk factory has been completed.

SCUNTHORPE.—The U.D.C. has approved plans for swimming baths, at an estimated cost of £17,812. The site under consideration is that of the old gasworks on the Doncaster-road.

SEAHAM HARBOUR.—The U.D.C. Surveyor has prepared plans for the proposed new mortuary.—Plans have been passed for the erection of a convenience in Witton-park.—Estimates are to be prepared for widening George-street. Sites are to be obtained for the erection of two sub-stations.—Sanction is being sought for a scheme for the erection of 56 houses on the Carr estate.

SHIPLEY.—The U.D.C. have asked the Surveyor to prepare plans for the erection of cottage baths on a site in Pinnel-road.—Plans passed: 22 houses, Nab Wood Rise, for W. Pitts & Sons.

SHOREHAM.—The U.D.C. are considering extensions at the Town Hall in order to increase the office accommodation.

SHOTTERMILL.—The Surrey E.C. has prepared revised plans for the erection of an elementary school, the cost being reduced to £13,650.

SKEGNESS.—A scheme has been projected for the erection of a large convalescent home for members of the Derbyshire Miners' Welfare societies. P. Houfton, F.R.I.B.A., Furnival Chambers, Chesterfield, has prepared preliminary plans.

SOLIHULL.—The Warwickshire E.C. has decided to acquire the Malvern House and grounds, comprising 11 acres, and it is proposed to adopt the buildings for school requirements.

SOUTHEND-ON-SEA.—The Borough Surveyor has submitted plans and estimates for the construction of 18 additional dressing boxes at the eastern end of the Leigh Bathing Station so as to provide additional accommodation for the men's section. The Baths Sub-Committee recommend that he be authorised to proceed with the carrying out of the work at an estimated cost of £550.—The Sub-Committee inspected the hot sea-water baths and have considered the suggestions put forward by the Piermaster that the existing plunge bath in the ladies' section should be converted into private baths. The Sub-Committee approved the proposed alteration and have directed the Borough Surveyor to submit sketch and estimate for the construction, at an estimated cost of £200.

SOUTHSEA AND PORTSMOUTH.—The B.G. has accepted a tender for the extension of the infirmary, at a cost of £17,000.

SPRINGFIELD.—The Middlesex C.C. has decided to erect glasshouses at the Mental Hospital, at a cost of £600.

STALYBRIDGE.—The M.H. has sanctioned the borrowing of £9,940 by the T.C. for the adaptation of West Hill for school purposes.

STOKE-ON-TRENT.—Further information is to be obtained regarding the proposal to establish public washhouses. A building for filtration plant is to be erected at Hanley at a cost of £500.—Messroom accommodation is to be provided at Hanley abattoir at a cost of £270.—It is urged that modern conveniences should be provided at Burslem markets.—The City Engineer is preparing a scheme for the reconstruction of Burslem Old Town Hall.—A motor garage is to be constructed at the Burslem depot, at a cost of £880.—The Sutton Trustees have purchased 7 acres adjoining Stoke Lodge for a housing scheme.—The Primitive Methodist Trustees have acquired a site at Bucknall for the erection of a chapel. A rehousing scheme is being prepared in connection with the Massey improvement scheme, Burslem.—Sanction has been given for a loan of £120,000 for the completion of the gas centralisation scheme.—Revised estimates have now been prepared for the scheme for the reconstruction of Holden Viaduct, the cost being £17,500.—A scheme is to be prepared for the provision of additional accommodation for mental defectives.—The City Council has approved the arrangements with the Michelin Tyre Company for the establishment by the company of a new factory in the city on a site to be acquired from the Corporation.

SWANSEA.—An important scheme providing for the building of 200 houses in all is projected at Manselton by the Great Western Railway Housing Society, of Westbourne-grove, W.2. Mr. T. Alwyn Lloyd, F.R.I.B.A., 6, Cathedral-road, Cardiff, architect.

THRYBERGH.—A school for about 300 children is to be provided by the Roman Catholic trustees.

TIPPERARY.—The Condensed Milk Co. of Ireland are erecting a steel-framed condensed milk and butter factory and flour and maize mill.

TONBRIDGE.—Sanction is being sought by U.D.C. to borrow £1,000 for laying out River Lawn, a band-stand and paddling pool.

TORQUAY.—The T.C. has resolved to buy 36 acres of land at Hele, St. Marychurch, for the erection of 181 houses. It is estimated that the cost of the whole scheme will be £116,075.—The T.C. has under consideration the acquisition of another thirty acres of land for the erection of a further 200 houses.

TOTTENHAM.—The M.H. has agreed to the transfer to the E.C. of nine acres of land adjacent to Devonshire Hill School for educational purposes.—Steps are to be taken by the U.D.C. to acquire all available vacant land for housing purposes.—Application is to be made to the M.H. for sanction to the borrowing of £5,631 for erection of caretaker's house and boundary walls at Vale-road new school, and a loan of £5,092 in respect of caretaker's house, fences, playing ground and sheds, and drainage at Philip-lane Deaf School.

WELWYN.—The Herts E.C. are to acquire a site for the erection of an elementary school for 300 children.

WESHAM.—The Parish Church Council has decided to proceed with the final section of the building scheme, which will give increased accommodation for 200 worshippers.

WESTBOURNE.—The B.G. has decided to convert the old workhouse into a children's home, and tenders are now being invited for the work.

WEST EALING.—St. John's Parochial Council proposes to erect a new mission hall at Green Man-lane.

WEST HAM.—The T.C. are to make application to borrow £46,727 for various tramway works.—The Borough Engineer has submitted alternative schemes for the construction of an open-air swimming bath in West Ham Park, at an estimated cost of £10,000 and £12,000 respectively, and also the suggested site for its construction near the Ham Park-road entrance to the park. The Public Health Committee had approved the site and instructed the Borough Engineer to submit the £12,000 scheme to the West Ham Park Committee.

WESTON-SUPER-MARE.—The M.H. held an inquiry, relative to the petition of the Somerset C.C., for the issue of a provisional order empowering them to purchase by compulsory powers land and buildings for extension of the county offices in the Boulevard. Although no detailed estimates have yet been prepared, it was stated that the cost will probably be about £45,000. Additional buildings are to be erected at the rear of the existing offices.

WHITWOOD.—The West Riding C.C. has acquired a site near the Four-lane Ends to erect the proposed new mining college. The site comprises 17 acres. Plans are in course of preparation by the architect's section of the County Council.

WHITWORTH.—The Hampshire E.C. has decided to proceed with the erection of a school for about 150 children.

WOKING.—Plans have been approved for the erection by the Surrey E.C. of a junior mixed and infants' school on a site at Westfield, to the design of Jarvis & Richards, architects, 60, Tufton-street, S.W.1.—The Surrey C.C. are to erect an office at Goldsworth-road, at a cost of £800.

WOLVERHAMPTON.—The E.C. are to remodel the Willenhall-road schools and erect two new blocks. A tender of £27,412 has been accepted, but this figure does not include lighting and heating installations.

WORCESTER.—At a cost of £580, the B.G. are to convert the workhouse bakery into a nurses' home.

WORKSOP.—The U.D.C. has acquired new sites in Anston-avenue and Gateford-road, upon which they propose to carry out two new housing schemes.

WORTHING.—It is proposed to build a new church in the High-street, dedicated to St. James, and accommodation for 300 worshippers. Mr. T. H. Winny, architect, 11, Woodcote Valley-road, Purley, Surrey.

YORK.—The E.C. has asked Mr. F. T. Penty, architect, to prepare plans for a new elementary school on the housing estate.

BUILDERS' FOREMEN AND CLERKS OF WORKS

THE annual dinner of the Provident Institution of Builders' Foremen and Clerks of Works was held at the Holborn Restaurant, London, on Saturday, January 30th, Mr. A. H. B. Colls (the President) presiding over a large gathering.

After the usual loyal toast had been honoured, the chairman, in proposing the toast of "The Institution," said that, when his late father occupied the same position in 1892 as he (the speaker) did at that moment, the pensions amounted to £267, whereas to-day they totalled £1,126, which went to prove the growth of the Institution. To enable them to maintain that growth, they must have more money—he earnestly asked them to support him to the utmost of their power, because he was anxious, when the result was known, that those responsible for the running of the Institution might feel that they had not to live on capital, but that sufficient might be raised to pay for the year's pensions. He did not think the Institution was sufficiently supported by the master builders, although many of his friends had sent contributions.

Mr. F. J. Dexter (Treasurer), in responding, expressed pleasure at their having so influential a chairman as Mr. Colls, a fact which he felt confident guaranteed such a generous response to the appeal as to relieve them from anxiety for the remainder of the year.

Mr. A. B. Falkner (President, L.M.B.A.), in proposing the toast of "The Architects and Surveyors," expressed the pleasure they all felt in meeting general foremen and clerks of works anywhere. If the best results were to be obtained in the erection of magnificent buildings, it could only be by the harmonious working of every section engaged upon them. They all loved good craftsmanship, but the builders' pleasure in realising the conception of a master mind was not always adequate compensation for loss of profit. He thought perhaps, on larger contracts, the best system for producing results satisfactory to all concerned was to agree upon a schedule of fair prices. If that were done, the builder might hope to enjoy the pleasure of good craftsmanship and the satisfaction of a fair price.

Mr. Wm. Woodward, F.R.I.B.A., in responding as an old friend, said he hoped to continue to deserve to be so called. He welcomed Mr. Falkner's observations on the subject of fair prices. He did not care an atom what the builders were paid, but they wanted a fair amount of work for it.

Mr. A. S. Bennion, F.S.I., congratulated the Institution on securing such an able chairman as Mr. Colls, such an excellent secretary as Mr. Searchfield, and such an energetic treasurer as Mr. Dexter. He paid tribute to the assistance surveyors never failed to receive at the hands of the builders' foremen and clerks of works.

Mr. E. J. Brown proposed the toast of "The Master Builders and Contractors."

In responding, Mr. G. J. Aldous, M.C., said it was always a pleasure to sit down to dinner with the builders' foremen and clerks of works, because they were men for whom he had always felt the greatest admiration and respect. Upon them, to a very great extent, depended the success or failure of the contract upon which they were engaged, and, what was more important, the reputation and good name of the builder, which it was in their power either to enhance or mar. He congratulated the Institution on the noble work it was doing on behalf of those who had fallen by the way, and expressed his intention, so far as lay in his power, to persuade all the master builders with whom he came into contact to support it.

Mr. W. Mitchell, in an able speech, proposed the toast of "The Visitors."

Mr. John Todd, in replying, said they were all engaged in a most important work, that being nothing more nor less than the rebuilding of London on a scale and in a style of magnificence which had never before been attempted.

The toast of "The President" was proposed by Mr. Wm. Woodward in an apt speech, to which the President replied.

PRICES CURRENT OF MATERIALS

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.]

BRICKS, &c.

Per 1,000 Alongside, in River Thames up to London Bridge.

	£ s. d.
Best Stocks	4 3 6
Second Hard Stocks	3 18 6

Per 1,000. Delivered at London Goods Stations.

	£ s. d.		£ s. d.
Flettons, at			
King's Cross	2 13 3	Best Blue Pressed Staffs	9 5 0
Do. grooved for Plaster	2 15 3	Do. Bullnose	9 15 0
Do. Bullnose	3 8 3	Blue Wire Cuts	7 5 0

Best Stourbridge Fire Brick :—

2½ in.	8 11 0	3 in.	10 3 0

GLAZED BRICKS—

Best White Ivory, and Salt Glazed Stretchers	21 10 0	D'ble Str'tch'rs	30 0 0
		D'ble Headers	27 0 0
		One Side and two ends	31 0 0
Headers	21 0 0	Two Sides and one End	32 0 0
Quoins, Bullnose and 4½in. Flats	28 0 0	S p l a y s and Squints	29 10 0

Second Quality, £1 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours, Hard Glaze, £5 10s. extra over white.

BREEZE CONCRETE SLABS.

Delivered London.

	s. d.		s. d.
2 in. per yd. super	1 11	3 in. per yd. super	2 9
2½ in. „ „	2 4	4 in. „ „	3 6

	s. d.	
Thames Ballast	10 6	per yd. delivered 2 miles radius Paddington.
Pit Sand	13 9	„ „
Thames Sand	14 6	„ „
Best Washed Sand	14 6	„ „
½in. Shingle for Ferro-Concrete	12 9	„ „
¼in. „ „	14 0	„ „
½in. Broken Brick	11 6	„ „
Pan Breeze	7 6	„ „

Per ton delivered in London area in full van loads.

Best Portland Cement. British Standard Specification. Test £2 18 0 to £3 3 6 51s. alongside at Vauxhall in 80-ton lots.

Ferrocrete per ton extra on above	0 10 0
Super Cement (Waterproof)	4 8 0
Roman Cement	8 15 0
Parian Cement	5 15 0
Keene's Cement, White	5 15 0
„ „ Pink	5 10 0
Plaster, Coarse, Pink	3 0 0
„ „ White	3 12 6
„ Fine	5 12 0
Strapite, Coarse	3 9 0
„ Finish	3 17 0
Grey Stone Lime	2 11 9
Chalk Lime	2 11 9
Best Ground Blue Lias Lime	2 4 6
Hair	32 0 0
Granite Chippings	1 12 0

NOTE.—Sacks are charged 1s. 9d. each and credited 1s. 6d. if returned in good condition within three months carr. pd.

Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dp.

STONE.

	s. d.
BATH STONE—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	2 9½
Do. do. delivered in railway trucks at Nine Elms, L. S.W.R., per ft. cube	2 11½
PORTLAND STONE— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, L. & S.W.R., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R., per ft. cube	4 4
Do. do delivered on road wagons at above stations, per ft. cube	4 5
White basebed, 3d. per ft. cube extra. NOTE.—1d. per ft. cube extra for every foot over 20 ft. *average*, and ½d. beyond 30 ft.	
HOPTON-WOOD STONE— Delivered at any Goods Station, London.	s. d.
Small random blocks, up to 10 ft. cube. P. ft. cb.	7 0
Random blocks from 10 ft. and over „	17 0
Sawn two sides „	27 0
Sawn three or four sides „	32 0
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station, London.	s. d.
6 in. sawn two sides landings to sizes (under 30 ft. super.) Per ft. super	5 6
6 in. rubbed two sides, ditto „	6 0
3 in. sawn two sides slabs (random sizes) „	2 3½
2 in. to 2½ in. sawn one side slabs (random sizes) „	1 6½
1½ in. to 2 in. ditto, ditto „	1 4
BAR : YORK— Delivered at any Goods Station, London.	
Scappled random blocks Per ft. cube	6 3
6 in. sawn two sides landing to sizes (under 40 ft. super) Per ft. super	5 1½
6 in. rubbed two sides, ditto „	6 1½
4 in. sawn two sides slabs (random sizes) „	2 10
3 in. ditto ditto „	2 1½
2 in. self-faced random flags Per yd. super	9 0

ARTIFICIAL STONE.

Delivered in London Area in full van loads, per ft. cube :—Plain, 8s. 6d. ; Moulded, 9s. 6d. Cills, 10s. 0d.

WOOD.

GOOD BUILDING DEAL.

Inches.	per stan.	Inches.	per stan.
4 × 11	£28 0	3 × 6	£21 0
4 × 9	25 0	3 × 11	25 0
4 × 8	24 0	2 × 11	25 0
4 × 7	23 0	3 × 9	24 0
3 × 8	21 0	2½ × 9	23 0
3 × 7	20 0	3 × 4½	22 0
2½ × 7	20 0	3 × 4	22 0

PLANED BOARDS.

1 × 11	£27 0	1 × 9	£26 0

PLAIN EDGE FLOORING.

Inches.	per sq.	Inches.	per sq.
¾	20/-	1½	31/-
⅞	22/-	1¾	34/-
1	25/-		

TONGUED AND GROOVED FLOORING.

Inches.	per sq.	Inches.	per sq.
1	25/-	¾	16/6
1¼	31/-	⅞	19/-
1½	34/-	1	24/-

MATCHING (BEST).

Inches.	BATTENS.	s. d.
¾ × 2		2 6 per 100 ft.

SAWN LATHS.

Per bundle	0 2 4

1" AND UP THICK.

	£ s. d.		£ s. d.
Dry Austrian Wainscoat, per ft. cube	0 16 0	to 0 18 0	
Dry American and /or Japanese Figured Oak, ft. cube	0 15 0	to —	
Dry American and/or Japanese Plain Oak, ft. cube	0 11 0	to 0 13 0	
Dry sq. edged Honduras Mahogany, ft. cube	0 16 0	to 0 18 0	
Dry Log cut Honduras Mahogany, ft. cube	0 18 0	to 1 1 0	
Dry Cuba Mahogany, ft. cube	1 4 0	to 1 10 0	
Dry Teak, ft. cube	0 13 0	to 0 15 0	
Dry American Whitewood, ft. cube	0 11 0	to 0 14 0	
Best Scotch glue, per cwt.	4 10 0	to —	
Liquid Glue, per cwt.	4 7 0	to 5 10 0	

SLATES.

First quality slates from Bangor or Portmadoc carriage paid in full truck loads to London Rate Station. Per 1,000 of 1,200.

	£ s. d.		£ s. d.
24 by 12	37 12 6	18 by 10	21 2 6
22 by 12	34 0 0	18 by 9	18 12 6
22 by 11	31 5 0	16 by 10	17 12 6
20 by 12	29 15 0	16 by 8	13 15 0
20 by 10	25 12 6		

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles from Broseley or Staffordshire district	5 12 6
Ditto hand-made ditto	5 17 6
Ornamental ditto	6 2 6
Hip and valley tiles (per dozen) Hand-made	0 9 6
Hip and valley tiles (per dozen) Machine-made	0 9 0

METALS.

JOISTS, GIRDERS, &c., TO LONDON STATION, PER TON—	£ s. d.
R.S. Joists, cut and fitted	12 10 0
Plain Compound Girders	14 10 0
„ Stanchions	16 10 0
In Roof Work	19 10 0

MILD STEEL ROUNDS.

To London Station, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	12 0 0	⅝ in. to ¼ in.	10 15 0
⅛ in.	11 0 0	⅞ in. to 2½ in.	10 10 0

WROUGHT-IRON TUBES AND FITTINGS—

(Discount off List for lot of not less than £7 net value delivered direct from Works, 2½ per cent. less above gross discounts, carriage forward if sent from London Stocks.)

	Tubes.	Fittings.	Flanges.
Black Gas	60 %	50%	60%
Galvanised Gas	45 %	40%	50%
Blue Water	55 %	45%	55%
Galvanised Water	38½%	35%	45%
Red Steam	50 %	40%	50%
Galvanised Steam	32½%	30%	40%

C.I. HALF-ROUND GUTTERS—London Prices, ex Works.

Per yd. in 6 ft. lengths.	Angles and Gutters.	Nozzles.	Stop Ends.
3 in.	1/2½	11½d.	3½d.
3½ in.	1/4	1/0½	3½d.
4 in.	1/5	1/2½	3½d.
4½ in.	1/6½	1/4	4½d.
5 in.	1/9½	1/5½	5½d.
O.G. GUTTERS.			
3 in.	1/7	1/3½	3½d.
3½ in.	1/7	1/3½	3½d.
4 in.	1/8½	1/4	3½d.
4½ in.	1/10½	1/6½	4½d.
5 in.	2/3	1/9½	5½d.

RAIN-WATER PIPES, &c.

Per yd. in 6 fts.	Pipe.	Bends, stock angles.	Branches, stock angles.
2 in. plain	1/9½	1/2½	1/8½
2½ in. „	1/11½	1/4	2/0½
3 in. „	2/4½	1/8	2/6
3½ in. „	2/10	2/-	2/10½
4 in. „	3/3	2/4½	3/6

L.C.C. COATED SOIL PIPES—London Prices, ex Works.

	Pipe.	Bends, stock angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
2 in. per yd. in 6fts. plain	2 11	2 3	2 9
2½ in. „	3 5	2 6	3 5
3 in. „	4 1	2 9	4 0½
3½ in. „	4 5½	3 5	4 8½
4 in. „	4 11½	3 9½	5 5½

L.C.C. COATED DRAIN PIPES—London Prices ex Works.

	Pipe.	Bends, stocks angles.	Branches, stock angles.
	s. d.	s. d.	s. d.
3 in. per yd. in 9ft. lengths	4 3	5 9	7 8
4 in. „ „	6 3	6 11	9 6
5 in. „ „	7 10	12 0	16 3
6 in. „ „	9 6	15 0	20 9

Gaskets for jointing, 38/6 per cwt.

IRON—	Per ton in London. £ s. d.		£ s. d.
Common Bars	13 0 0	to	14 10 0
Staffordshire Crown Bars—good merchant quality	14 5 0	..	15 5 0
Staffordshire "Marked Bars"	16 5 0	..	17 5 0
Mild Steel Bars	10 0 0	..	11 0 0
Steel Bars, Ferro-Concrete quality, basis price	10 0 0	..	11 0 0
Hoop iron, basis price	12 0 0	..	13 0 0
„ Galvanised	27 0 0	..	28 0 0
Soft Steel Sheets, Black— Ordinary sizes to 20 g.	13 5 0	..	14 5 0
„ „ „ 24 g.	14 5 0	..	15 5 0
„ „ „ 26 g.	16 5 0	..	17 5 0
Sheets Flat Best Soft Steel, C.R. & C.A. quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15 10 0	..	16 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 22 g. and 24 g.	16 10 0	..	17 10 0
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 26 g.	18 10 0	..	20 10 0
No. 1 quality £4 per ton extra.			
Flat and Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 9 ft. to 20 g.	18 10 0	..	19 10 0
Ordinary sizes, 6 ft. to 9 ft. to 22 g. and 24 g.	19 0 0	..	20 0 0
Ordinary sizes, 6 ft. to 9 ft. to 26 g.	22 0 0	..	23 0 0
Sheets Galvanised Flat, Best quality— Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	22 0 0	..	23 0 0
Best Soft Steel Sheets, 22 g. and 24 g.	24 0 0	..	26 0 0
Best Soft Steel Sheets, 26 g.	25 10 0	..	26 10 0
Cut Nails, 3 in. to 6 in.	19 0 0	..	20 0 0
(Under 3 in. usual trade extras.)			

METAL WINDOWS.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 1s. 4d. to 1s. 7d. per foot super.

LEAD, &c.

(Delivered in London.)	£ s. d.
LEAD—Sheet, English, 4 lb. and up	46 10 0
Pipe in coils	48 0 0
Soil Pipe	50 0 0
Compo Pipe	51 0 0

NOTE—Country delivery, 30s. per ton extra ; lots under 3 cwt., 3s. per cwt. extra, and over 3 cwt. and under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra.

Old lead, ex London area, at Mills per ton	32 0 0	—
Do., ex country, carriage forward per ton	33 0 0	—

COPPER.

	s. d.
Seamless Copper tubes (basis) per lb.	1 1
Strong sheet „	1 0
Thin „	1 1
Copper nails „	2 3
Copper wire „	2 4

PLUMBERS' BRASS WORK.

Delivered in London.

NEW RIVER PATTERN SCREW DOWN BIB COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
29/-	45/-	76/-	153/-	246/-	510/- per doz.

NEW RIVER PATTERN SCREW DOWN STOP COCKS AND UNIONS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
41/6	62*-	92/-	174/-	300/-	588/- per doz.

NEW RIVER PATTERN SCREW DOWN MAIN FERRULES.

½ in.	¾ in.	1 in.
39/6	60/-	116/6 per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
7/6	10/-	14/-	23/-	30/-	42/- per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
7/6	11/-	17/-	29/-	36/-	63/- per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
10/-	12/-	20/-	24/-	31/- per doz.

NEW RIVER PATTERN CROYDON BALL VALVES, S.F.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.
35/-	56/-	98/-	162/-	228/- per doz.

DRAWN LEAD P. & S. TRAPS WITH BRASS CLEANING SCREW.

	1½ in.	1½ in.	2 in.	3 in.	
8 lbs. P. traps	33/-	41/-	56/-	101/-	per doz.
8 lbs. S. traps	35/-	45/-	66/-	126/-	„

TIN—English Ingots, 2/9 per lb. SOLDER—Plumbers' 1/2, Tinmen's 1/5. Blowpipe 1/6 per lb.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil, in pipes per gallon	0 2 11
„ „ „ in barrels „	0 3 1
„ „ „ in drums „	0 3 4
Boiled „ „ in barrels „	0 3 4
„ „ „ in drums „	0 3 7
Turpentine in barrels „	0 5 6
„ in drums (10 gall.) „	0 5 9
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)	55 10 0
GENUINE WHITE LEAD PAINT— "Father Thames," "Nine Elms," "Park," "Supremus," "St. Paul's," "Morganswyte," "Polacco," and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered	75 15 0
Red Lead, Dry (packages extra) per ton	49 0 0
Best Linseed Oil Putty per cwt.	0 15 0
Filocol „	0 15 6
Size. XD Quality „	0 3 0

Continued on next page.

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PRICES CURRENT OF MATERIALS (*contd.*)

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

	Per Ft.		Per Ft.
15 oz. fourths ..	3½d.	32 oz. fourths	8d.
15 „ thirds	4½d.	32 „ thirds	9½d.
21 „ fourths ..	4½d.	Obscured Sheet, 15 oz.	4d.
21 „ thirds	5½d.	„ „ 21 „	5½d.
26 „ fourths ..	5½d.	Fluted 15oz. 6½d., 21oz.	9½d.
26 „ thirds	7½d.	En'led 15oz. 5½d., 21oz.	7½d.

Extra price according to size and substance for squares cut from stock.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	4½d.
⅛ Rough rolled	5½d.
⅛ Rough rolled	5½d.
Figured Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish White..	6½d.
Ditto, tinted	9d.
Rolled Sheet	6d.
White Rolled Cathedral	5½d.
Tinted do.	7½d.

Cast Plate is same price as rough rolled.

VARNISHES, &c.

		Per Gallon. £ s. d.
Oak Varnish.....	Outside	0 14 0
Fine ditto.....	ditto	0 16 0
Fine Copal	ditto	0 18 0
Pale Copal	ditto	1 0 0
Pale Copal Carriage	ditto	1 4 0
Best ditto.....	ditto	1 12 0
Floor Varnish	Inside	0 18 0
Fine Pale Paper.....	ditto	0 18 0
Fine Copal Cabinet	ditto	1 2 6
Fine Copal Flatting	ditto	1 0 0
Hard Drying Oak	ditto	0 18 0
Fine Hard Drying Oak.....	ditto	0 19 0
Fine Copal Varnish	ditto	1 0 0
Pale ditto	ditto	1 2 0
Best ditto	ditto	1 12 0
Best Japan Gold Size		0 12 6
Best Black Japan		0 10 6
Oak and Mahogany Stain (water).....		0 12 0
Brunswick Black.....		0 7 6
Berlin Black		0 14 6
Knotting (patent)		1 5 0
French and Brush Polish		0 17 0
Liquid Dryers in Terebine		0 9 0
Cuirass Black Enamel		0 7 0

NEW INVENTION

Illuminated White Line in Road Surfaces.

A practical solution to the "white line" problem has been found, it is claimed, by Mr. R. F. Brown, surveyor, of Great Clacton, Essex. The line consists of alternate pieces of prism glass and white marble, an inch wide, beneath which is a watertight iron casing through which runs a train of electric light bulbs. The power is supplied from the electric main at the side of the road, and an automatic device switches the lights on at lighting-up time and puts them out at daybreak. The question of strength in construction to enable the invention to resist the heavy road traffic has been over come by the introduction of reinforcement, lamination, and special lenses. The framing is manufactured in sections of convenient lengths of wrought iron, about 3½ in. in width and 5 in. in depth.

North-West Durham Builders.

Mr. P. Duffy presided over the annual meeting of the North-West Durham Building Trades Employers' Association, held at Stanley. In his annual report, the Secretary (Mr. C. Eltringham) stated that local builders had had a busy year, and that the keen cutting of prices for work was the most effective answer to the charge that their organisation was a "ring" for keeping up prices. Housing schemes by direct labour still continued, but to a lesser extent than in the past, experience having taught local authorities that firm contracts from private builders were more economical. Officers elected for the forthcoming year were: President, Mr. J. Eltringham, Blackhill; Vice-Presidents, Mr. P. Duffy (Stanley), and Mr. J. Bowers (Rowlands Gill); Secretary and Treasurer, Mr. Charles Eltringham; Executive Committee, Messrs. J. Lee, J. H. Ayton, W. F. Rendle, H. Kindred, W. Ellender, A. J. Bulmer, P. Heel, J. G. Bell, J.W. Rutter, H. Davison, R. Southern, and R. Ainsley; and Representatives to Northern Counties Federation and Blyth and Tyne Area Committee, Messrs. Rutter, Bowers, and Chas. Eltringham. On the termination of the meeting, the annual dinner was held under the presidency of Mr. P. Duffy.

THE SCOTTISH BUILDER

STEEL HOUSES IN SCOTLAND

The proposal for building steel houses in Scotland have reached a stage (writes a correspondent), when it is possible to indicate that they will be erected in at least four places—Edinburgh, Clydebank, Greenock, and Dundee. At Dundee it is proposed to erect 150 Weir houses, 100 Atholl houses, and 50 Cowieson houses. As matters stand at present, these will be a present from the State to the local authority, who will start drawing rates as soon as the houses are occupied. It has, however, been suggested by Sir John Gilmour these houses should only be built if the local authority agrees to build an equivalent number, and this is raising a good deal of controversy. It is not expected, in view of the present attitude of the Glasgow Corporation, that any Weir houses will be erected there, although Cowieson and Atholl houses are under consideration.

NEW BUILDINGS IN SCOTLAND

Edinburgh.—FACTORY.—A new ice-cream factory is to be built at West Bryson-road, for the Edinburgh and Dumfriesshire Dairy Co., Ltd. Plans have been before the Dean of Guild Court for consideration. The plans have been prepared by Mr. Purdon Smith, architect, Dumfries and Lockerbie.

Lower Renfrewshire.—HALL.—Church hall at Freeland U.F. Church, Bridge of Weir, for A. M. MacLeod, Bridge of Weir; Chapel at Old Greenock-road, Bishopton, for Roman Catholic Diocesan Trustees, 160, West Regent-street, Glasgow.

Glasgow.—HOUSES.—The Housing Committee of the Corporation has authorised the director of housing to prepare plans for the erection of 1,000 houses.

Loanhead.—HOUSES.—The plans of a housing scheme proposed to be carried out by Loanhead Town Council, and comprising 32 houses to be erected immediately by the Lasswade District Committee of the Midlothian C.C.

Ballinluig.—HALL.—A public meeting of the inhabitants of Mid-Atholl has been held to consider the question of the erection of a steel hall costing £3,000. On a vote being taken, it was decided in favour of a steel hall.

Forth.—BRIDGE.—The Lord Provost's Committee of the Edinburgh Town Council has resolved to recommend that a grant of £1,000 be made by the Corporation towards the cost of the preliminary survey in connection with the scheme for erecting a bridge for road traffic over the Firth of Forth at South Queensferry. The estimated cost of the survey is £10,000

Dunfermline.—EXTENSION.—Appeal has been opened for between £30,000 and £40,000, to enable the managers of the Dunfermline and West Fife Hospital to go on with extension work.

Aberdeen.—BUILDINGS.—Plans of buildings to cost £10,738 have been sanctioned by the Plans Committee of the Town Council. Seven dwelling-houses will be erected at a cost of £6,300.

Lothian.—HOUSES.—The East Lothian Western District Housing Committee has received an intimation from the Scottish Board of Health of its approval of the offer by Mr. R. Baillie, contractor, to build brick houses on a modified plan at £398 each, and the Committee resolved to build 100 new houses at this price. The Housing Committee recommended a provisional allocation of the houses as follows: 40 at Prestonpans, including Meadowmill and Tranent Parish; 20 at Ormiston, 10 at Macmerry, 10 at Longniddry, 10 at Gifford, and 10 at Pencaitland. Powers have been given to the Committee to fix on sites and proceed with the erection of the 100 new houses as early as possible.

Contractor's Estate.

Mr. D. Kennedy Symington, contractor and quarrymaster, of 13, Clarendon-terrace, Dundee, left an estate of £23,532.

BUILDING TRADE WAGES IN SCOTLAND.*

THE following are the present rates of wages in the building trade in the principal towns of Scotland. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur:—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Labourers—Masons', Bricklayers', Plasterers'.
Aberdeen	1/8	1/8½	1/8	1/8	1/8	1/8	1/7	10½d. to 1/1
Airdrie	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3
Alexandria.....	1/8	1/8	1/8	1/8	1/8	1/8	—	1/2½ to 1/3½
Arbroath	1/7	1/7	1/7	1/7½	1/7	1/7	1/5½	1/1½
Ayr	1/8	1/8	1/8	1/8	1/8	1/8	1/6½	1/3
Bathgate	1/8	1/8	1/8	1/8½	1/8	1/8	1/6½	1/2 to 1/3
Blairgowrie	1/7	1/7	1/7	1/7½	1/5	1/7	1/4	10d. to 1/-
Bo'ness	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Coatbridge.....	1/8	1/8	1/8	1/8	1/8	—	1/6½	1/3 to 1/3½
Dumbarton	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Dumfries	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Dundee	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3
Dunfermline	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Edinburgh	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Falkirk	1/7½	1/7½	1/7	1/8	1/7	1/7	1/6½	1/2½
Fort William.....	1/6	1/6	1/6	1/6	1/6	1/6	1/6	1/2
Galashiels	1/7	1/7	1/7	1/7	1/7	1/7	1/7	1/2½
Glasgow	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Greenock	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/0½ to 1/3½
Hamilton	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Hawick	1/7	1/7	1/7	1/7-1/7½	1/7	1/7	1/7	1/2½
Helensburgh	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½
Inverness	1/5	—	1/5	1/4	1/5	1/5	1/4	1/- to 1/2
Kilmarnock	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Kirkcaldy	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Kirkwall.....	1/5	1/5	1/4	1/5	1/5	1/4	1/4	1/-
Lanark	1/8	1/8	1/8	1/9	1/8	1/8	1/6	1/0 to 1/3
Leith	1/8	1/8	1/8	1/8	1/8	1/8	1/8	1/3½
Motherwell.....	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3½
Perth	1/8	1/8	1/8	1/9	1/8	1/8	1/6½	1/3
Stirling	1/8	1/8	1/8	1/9	1/8	1/8	1/8	1/3½
Stirlingshire (Eastern District)	1/8-1/10	1/8-1/10	1/8	1/9	1/7	1/8	1/6½	1/3½
Wishaw.....	1/8	1/8	1/8	1/9	1/8	1/8	1/7	1/3½

*The information given in this table is copyright. The rates of wages in the various towns in England and Wales are given on page 253.

CURRENT PRICES FOR BUILDING WORK IN LONDON*

EXCAVATOR.

		s.	d.
Digging and throwing or wheeling and filling carts, and carting away to shoot—6 ft. deep	per yard cube	11	0
Add if in clay	" "	1	0
Add for every additional depth of 6 ft.	" "	0	6
Planking and strutting to trenches	per foot super	0	5
Do. to sides of excavation, including shoring	" "	1	0

CONCRETOR.

Portland cement concrete in foundation 1 to 6	per yard cube	32	0
Add if in underpinning in short lengths	" "	7	0
Add if in floors 6 in. thick	" "	3	3
Add if in beams	" "	3	9
Add if aggregate 1 : 2 : 4	" "	10	0
Add for hoisting not exceeding 10 ft. beyond the first 10 ft.	" "	2	6

BRICKLAYER.

		£	s.	d.
Reduced brickwork in lime mortar and Fletton bricks	per rod	30	0	0
Add if in stocks	"	7	10	0
Add if in Staffordshire blues	"	22	0	0
Add if in Portland cement and sand	"	1	10	0

FACINGS.

Extra for facing in English or Flemish bond for every 10s. per 1,000 over the price of the common bricks	per ft. super	0	0	1½

POINTING.

Neat flat struck or weathered joint	" "	0	0	3

ARCHES.

Extra only to the price of ordinary brickwork :—				
Fair external in half brick rings	" "	0	0	10
Axed in stocks	" "	0	1	9
Rubbed and gauged jointed in putty camber or segmental	" "	0	6	0

SUNDRIES.

Damp course in double course of slates breaking joint and bedded in Portland cement	" "	0	1	0
Setting ordinary register grates and stoves	each	1	0	0
Setting kitchener, including forming flues, &c., with all necessary fire bricks	"	4	15	0

ASPHALTER.

		s.	d.
Half-inch horizontal damp course	per yard sup.	4	3
Three-quarter-inch vertical damp course	" "	8	6
¾ inch on flats in two thicknesses	" "	6	3
Angel fillet	per foot run	0	3
Skirting and fillet 6 in. high	" "	1	2

MASON.

York stone templates fixed	per foot cube	13	0
York stone sills fixed	" "	22	0
Bath stone and all labour fixed	" "	10	6
Portland stone fixed	" "	20	0

SLATER.

Welsh 16 in. × 8 in. 3 in. lap, including nails				per square	72	9
Do 20 in. × 10 in.	Do.	Do.		"	80	9
Do. 24 in. × 12 in.	Do.	Do.		"	90	0

CARPENTER AND JOINER.

Fir framed in plates	per foot cube	5	0	
Do. joists	" "	5	6	
Do. roofs, floors, and partitions	" "	6	0	
Do. trusses	" "	8	6	

	¾"	1"	1¼"	2"
Deal rough close boarding per sq.	35/6	40/-	45/-	72/-

		s.	d.
Flat centering for concrete floor, including struts or hangers	"	50	0
Do. to beams	per ft. sup.	1	0
Centres for arches	"	1	6
Gutter boards and bearers	"	1	0

FLOORING.

	¾"	1"	1¼"	1½"
Deal-edges shot per sq.		44/6	53/-	60/6
Do. tongued and grooved "		49/-	57/6	65/-
Do. matchings "	45/-	51/-		
Moulded skirting, including backings and grounds per ft. sup.	1/6	1/9	2/0	2/6

SASHES AND FRAMES.

		s.	d.
One-and-a-half moulded sashes or casements	per foot super.	1	10
Two Do. Do. Do.	" "	2	1
Add for fitting and fixing	" "	0	3
Deal-cased frames with 1 in. inner and outer linings, 1¼ in. pulley stiles tongued to linings, hard wood sills with 2 in. moulded sashes in squares, double hung, double hung with pulleys, lines and weights; average size	" "	3	9

DOORS.

	1½"	1¾"	2"
Two-panel square framed per ft. sup.	2/1	2/4	2/6
Four-panel Do. "	2/5	2/8	2/11
Two-panel moulded both sides "	2/8	2/11	3/2
Four-panel Do. Do. "	2/11	3/2	3/5

CARPENTER AND JOINER—continued.

FRAMES.

		s.	d.
Deal wrot moulded and rebated	per foot cube	14	0

	1"	1¼"	1½"
Plain deal jamb linings framed per ft. sup.	1/7	1/8	1/11
Deal shelves and bearers "	1/4	1/6	1/9
Add if cross-tongued "	2d.	2d.	2d.

STAIRCASES.

	1"	1¼"	1½"	2"	2½"
Deal treads and risers in and including rough brackets	2/1	2/4	2/9	—	—
Deal strings wrot on both sides and framed	1/8	2/-	2/2	2/8	—

		s.	d.
Housings for steps and risers	each	0	11
Deal balusters, 1 in. × 1¼ in.	per ft. run	0	9
Mahogany handrail: average 3 in. × 3 in.	" "	6	0
Add if ramped	" "	11	10
Add if wreathed	" "	23	9

FIXING ONLY IRONMONGERY (INCLUDING SCREWS).

6 in. barrel bolts	8½d.	Rim locks	2/-
Sash fasteners	11½d.	Mortice locks	4/6
Casement fasteners	1/5	Patent spring hinges and letting into floor and making good	19/-
Casement stays	1/2		
Cupboard locks	1/5		

FOUNDER AND SMITH.

		s.	d.
Rolled steel joists	per cwt.	16	3
Plain compound girders	"	19	0
Do. stanchions	"	21	9
In roof work	"	27	6

RAIN-WATER GOODS.

	3"	4"	5"	6"
Half-round plain rebated joints ft. run	1/6	1/9	2/-	2/6
Ogee Do. Do. "	1/9	2/-	2/6	3/3
Rain-water pipes with ears "	1/9	2/7	—	—
Extra for shoes and bends each	4/4	5/11	—	—
Do. stopped ends "	1/11	2/4½	3/7	4/-
Do. nozzles for inlets "	2/2	2/7	3/10	4/3

PLUMBER.

		s.	d.
Milled lead and laying in flashings and gutters	per cwt.	60	6
Do. Do. in flats	"	59	0
Extra labour and solder in coated cesspools	each	0	9
Welf joint	per ft. run	0	6
Soldered seam	" "	1	6
Copper nailing	" "	0	6

	½"	¾"	1"	1½"	2"	4"
Drawn lead waste per ft. run	1/2	1/9	2/-	3/4	4/-	—
Do. service "	1/8	2/2	2/7	3/10	—	—
Do. soil "	—	—	—	—	—	6/9
Bends in lead pipe each	—	—	—	—	3/3	8/2
Soldered stop ends "	1/2	1/8	2/1	2/10	3/6	—
Red lead joints "	11d.	1/-	1/3	1/11	2/4	4/10
Wiped soldered joints "	2/10	3/6	4/-	4/11	6/6	9/9
Lead traps and cleaning screws "	—	—	—	14/7	19/6	—
Bib cocks and joints "	6/4	9/7	15/4	41/-	—	—
Stop cocks and joints "	15/4	17/2	25/8	64/-	—	—

PLASTERER.

		s.	d.
Render, float and set in lime and hair	per yard sup.	2	4
Do. Do. Sirapite	" "	2	7
Do. Do. Keen's	" "	3	7
Add sawn lathing	" "	1	7
Add metal lathing	" "	2	6
Portland cement screed	" "	2	2
Do. plain face	" "	3	3
Mouldings in plaster	per 1 girth	0	1½
One-and-a-half granolithic pavings	per yard sup.	5	9

GLAZIER.

		s.	d.
21 oz. sheet plain	per foot sup.	0	8½
26 oz. Do.	" "	1	0
Obscured sheet	" "	1	1
⅛ in. rolled plate	" "	0	9
¼ in. rough rolled or cast plate	" "	0	10½
¼ in. wired cast plate	" "	1	4

PAINTER.

		s.	d.
Preparing and distempering, 2 coats	per yard sup.	0	9
Knotting and priming	" "	0	7
Plain painting, 1 coat	" "	0	9
Do. 2 coats	" "	1	2
Do. 3 coats	" "	1	9
Do. 4 coats	" "	2	4
Graining	" "	2	3
Varnishing twice	" "	1	9
Sizing	" "	0	3
Flatting	" "	0	7
Enamel	" "	1	1
Wax polishing	per foot sup.	0	6
French polishing	" "	1	2
Preparing for and hanging paper	per piece, 2/- to 4/-		

* These prices apply to *new buildings only*. They cover superintendence by foreman and carry a profit of 10 % on the prime cost without establishment charges. A percentage of 1½ should be added for Employers' Liability and National Health and Unemployment Acts and from 1s. 6d. per £100 for Fire Insurance. The whole of the information given on this page is copyright.

TRADE NEWS

Messrs. G. N. Haden & Sons, Ltd., notify that their telephone number is now Holborn 1257 (three lines).

Circular Saw Bench.

Messrs. J. Sagar & Co., Ltd., of Canal Works, Halifax, have sent us a leaflet dealing with their new G.M. circular saw benches with rising and falling table, and G.T. with fixed table. The former model is for general sawing, deep cutting, ripping, cross-cutting, bevel cutting, &c., rebating, tongueing, grooving, moulding, &c. An attachment for tenoning can also be supplied. The table has a rise and fall of 6 in.; the G.T. model is exactly the same, but has a fixed table. A rotary mortising and boring attachment can be supplied with either of these machines.

Building Materials.

The Consett Iron Co., Ltd., of Consett, Durham, have sent us two pocket-books dealing with their products. These include coal and coke, and the latter's by-products; all classes of bituminous mixtures and prepared tar for roads; bituminous paints and varnishes; disinfectant fluids and powders; irons of many different chemical analyses; mild steel plates of ship, bridge, and boiler quality; chequered plates; and iron and steel mongery. This firm is also the maker of Siemens Martin open hearth steel, acid and basic. Messrs. J. C. Mounsey & Co., Norfolk House, Laurence Pountney-hill, E.C., are their London agents.

"Doing Away with Chimney Breasts."

This is the title of a booklet we have received dealing with "Nautilus" economy gas flues. This system of flue construction is intended primarily for those cases where gas-heating has been decided on before the erection of a building. It consists of a number of cast-concrete flue blocks, which, built into the thickness of the walls, take the place of the orthodox 9 in. by 9 in. brick flue, and enable substantial structural and financial savings to be effected in the absence, not only of projecting chimney-breasts, but also of foundation concrete, brick footings, trimming joists and trimmers, concrete hearths, skew-back arches and large brick chimney-stacks.

Renovation Work.

We have received from Messrs. W. G. Beaumont & Son, of Priory Works, Bow, E. 3, their year book and blotting paper interleaved diary. This firm specialise in painting bridges, railway stations, gas holders, generating stations, &c. An example of the type of work they execute is the repair of the figure of Justice, the dome and the colonnade on the Central Criminal Court, which contract they have secured for four years. Other important contracts include the gilding of the planes on the Monument; painting, gilding and renovating generally the Tower Bridge and other London bridges; painting of gas holders and frameworks; interior and decorative painting; and repairing, rebanding, repointing, and demolishing chimneys.

Municipal Plant.

Messrs. The Phœnix Engineering Co., Ltd., of Chard, have sent us a copy of their latest "F" catalogue, which deals with their municipal plant manufactures, such as tumbler and night soil carts, road-sweeping machines and scraping machines, water-carts, and flushing vans, cesspool emptiers, street orderly carts, shear legs, jack rolls and "Durie" road spring water collecting box. Apart from this leaflet the firm issue various others dealing with tar, bitumen, boilers, spraying and grouting machines, and mastic and other combinations for dealing with asphaltic mixtures. For trench and contractors' work they issue a section wherein are given illustrations and particulars of their "Floodgate" and "Diaphragm" hand pumps, in many combinations.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach him not later than Tuesday evening.

* Denotes *accepted*. † Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.

ABERGAVENNY.—Alterations and erection of additional vagrant cells, wash house, &c., at the Institution, for the B.G. Mr. B. J. Francis, architect :—

Watkin Williams & Sons, Cardiff	£4,285 0 0
Jno. Charles & Sons, Newport	3,437 11 2
Stubbs, Douglas & Co., Abergavenny	3,360 0 0
Chas. Cooke & Co., Hereford	3,295 0 0
Foster & Hill, Abergavenny	3,150 0 0
J. G. Thomas & Sons, Abergavenny	3,149 0 0
†A. Graham & Sons, Abergavenny	3,125 0 0

ARMAGH.—Six houses in Navan-street, for the U.D.C. :—
*P. McKenna & Sons £2,637

AXMINSTER.—For (*a*) six houses, and (*b*) three houses, for the U.D.C. :—
*(*a*) J. Bayley £3,168
*(*b*) Mitchell & Bailey 1,422

BELPER.—Engine house and messroom at the outfall works, for the U.D.C. :—
*J. W. Haynes £315

BOLTON.—Convenience in Lever-street, for the T.C. :—
*S. Talbot & Son.

BOLTON-LE-SANDS.—Construction of the canal bridge, occupation bridge, and roadworks required in connection with the proposed new by-pass road, for the Lancashire C.C. :—
*J. Dickinson & Co., Bolton £40,270

BRIGHTON.—Bungalow, for Mrs. Paige, at Withdean. Mr. A. J. McLean, F.R.I.B.A., architect, 3, Palace-place :—

Saunders	£1,924
Gates & Sons	1,620
Elliott Bros.	1,386
Packham, Sons & Palmer	1,364
Cruttenden	1,320
Wilson & Sons	1,296
Braybon	1,258
*Elliott, Ltd.,	1,048

(Architect's estimate, £1,265.)

BRIGHTON.—Rebuilding 164 and 165, Western-road, for the C.B. :—

O. P. Drever & Son (Kettering), Ltd.	£12,250 0
The Ringmer Building Works	11,909 10
James Longley & Co., Ltd.	11,750 0
R. Cook & Sons, Ltd.	11,085 0
W. R. Andrews & Co.	10,774 10
James Barnes & Sons	10,456 0
James Bodle, Ltd.	10,180 0
‡Saunder's	10,108 0
James Smith & Sons (Norwood), Ltd.	10,105 0
George Lynn & Sons	9,980 0
Field & Cox	9,890 0

BROMLEY.—Further thirty-six houses, for the T.C. :—
C. I. Ward & Co., Ltd.

BURSLEM.—Reconstruction of Scotia-road bridge, for the Stoke Corporation :—
*John Wilson & Sons, Birmingham £16,402

BURSLEM.—Six houses at Massey-square, for the Stoke T.C. :—
‡ Finney & Broadhurst £3,050

CARDIFF.—Painting externally of portions of the City Mental Hospital :—
*F. Miller & Sons, Penarth £684 8

CHELMSFORD.—For (*a*) 16 houses at Great Baddow, (*b*) eight at Boreham, and (*c*) four at Chignal Smealey, for the R.D.C. :—

(*a*) *H. Potter, Chelmsford	£6,968
(*b*) *D. Marven, Galleywood	3,020
(*c*) *H. Potter, Chelmsford	1,570

CHELTENHAM.—Houses, for the T.C.

*W. Drew—20 pairs of parlour type	£1,200 per pair
*W. Drew—five pairs	£1,198 per pair
*C. Giles—two pairs	£1,190 per pair

CHESTER.—Alterations to "Egerton Arms" Hotel, Liverpool-road. Messrs. J. H. Davies & Sons, architects, Newgate-street :—
*W. Tilston, Chester.

COCKFIELD.—Additional buildings on Lands Farm, for the Durham C.C. :—
*J. W. Atkinson, Cockfield £1,787

COULSDON.—Highway Department buildings at Purley Oaks, for the U.D.C. :—
*Patterson & Moyle, Ltd., Ashtead £7,890

DARLINGTON.—Houses in Geneva-road, for the T.C. :—

‡Morris & Black—8 pairs	£8,894 13 9
‡J. M. Hall & Co.—4 pairs and a block of 4	4,767 18 0
‡R. T. Raiseborough—8 pairs	6,505 0 0

DONCASTER.—Painting the exterior of the Mansion House and Municipal Offices, Priory-place, for the T.C. Mr. R. E. Ford, Estates Surveyor :—
*The Standard Building Renovator, Leeds £225 10

DOVER.—Thirty-five houses, for the T.C. :—
*G. Lewis & Sons (Dover), Ltd. ..... £400 each

DUBLIN.—Buildings, for the Electricity Department :—

Thompson & Co., Ltd.	£653 18
Smith & Pearson, Ltd.	427 10
*A. & J. Main & Co., Ltd.	381 10

DURHAM.—Building of certain walls and the repair of the gable end of house at Gaunless Bridge, for the C.C. :—
*Dixon & Metcalfe £238 7 7

EASTBOURNE.—Convenience at Bedfordwell, for the T.C. :—
*Baldwin & Co. £674

ELISABETHVILLE.—Painting and renovation of new school department at the Council school, for the Durham C.C. :—
*Avis & Bowes, Durham £208 16

ELSWICK.—Reconstruction and widening of Thistleton Bridge, for the Lancashire C.C. :—
*T. Croft & Sons, Ltd., Preston £1,784 18

ENNISTYMON.—Repairs to the Court-house, for the Clare C.C. :—

M. Linnane, Ennistymon	£282 5 6
*W. McInerney, Kilrush	259 0 0

FENTON.—Sixty-four houses, Cowper site, for the Stoke Corporation :—
*Finney & Broadhurst, Burslem £31,209

HANLEY.—Conveniences at Ball-place, for the Stoke T.C. :—
*T. Godwin & Son, Hanley £1,510

HARPENDEN.—Improvement at the C.C. school, for the Herts C.C. :—
‡Blow & Peters, St. Albans £865

HARROW.—Additions and alterations to the County School for Boys, for the Middlesex C.C. Mr. H. G. Crothall, F.R.I.B.A., County Architect :—

Leslie & Co., Ltd., Kensington	£10,916
W. Lawrence & Son, Ltd., London	10,900
A. Monk, Lower Edmonton	10,817
G. Godson & Sons, Ltd., Kilburn	10,803
W. Lacey, Hounslow	10,627
G. Bollom & Sons, Ltd., Acton	10,621
H. Knight & Son, Tottenham	10,497
Ferris Bros., Acton	10,419
J. Dorey & Co., Ltd., Brentford	10,200
W. S. Try, Cowley	10,113
‡W. J. Maddison, Ltd., London	9,705

HEMEL HEMPSTEAD.—Two police cottages at Adeyfield, Hemel Hempstead, and Leverstock Green, for the Herts C.C. :—
W. Durant Wells, Hemel Hempstead ..... £750 each

HEMSWORTH.—New assembly hall and gymnasium at the Secondary School, for the Governors :—
‡A. Gregory & Son, Ltd.

HORWICH.—New bakery, Longworth-road, for the Industrial Co-operative Society, Ltd. Messrs Law & Grimshaw, architects, Market-street, Atherton :—
*J. Nuttall & Sons, Lostock.

HULL.—Heating the workshops and stores at the Cottingham-road car shed extension, for the T.C. :—

A. J. Snelling & Co.	£415 12 0
F. & T. Ross, Ltd.	372 13 8
‡Napier & Wheeldon	359 16 2
City Engineer's estimate	498 1 7

(All of Hull.)

HULL.—Stable buildings in John-street, for the T.C. :—

A. E. Jones (Hull), Ltd., Hull	£1,610 0 0
Stamp & Son, Burton-on-Humber	1,492 0 0
F. Southern, Hull	1,476 14 0
Hinch Bros., Ltd., Hull	1,455 0 0
J. Houlton & Son, Ltd., Hull	1,389 15 7
G. Houlton & Son, Hull	1,375 0 0
Kettlewell, Son & Co., Ltd., Hull	1,360 0 0
‡F. Singleton & Sons., Ltd., Hull	1,265 0 0

HULL.—Cabmen's shelter in Brook-street, for the T.C. :—

L. Dobbs, Hull	£325 10 0
A. E. Jones (Hull), Ltd., Hull	310 0 0
B. Barnaby, Hull	287 0 0
Stamp & Son, Barton-on-Humber	271 0 0
Exors. of W. Sanderson, Hull	269 5 5
H. Armstrong, Hull	261 16 6
R. Orwin, Hull	258 0 0
J. Houlton & Sons, Ltd., Hull	250 14 6
F. Singleton & Sons., Ltd., Hull	237 0 0
‡R. Cleminshaw, Hull	225 0 0
City Engineer's estimate, Hull	275 0 0

HULL.—External painting of 200 houses at East Hull estate, for the T.C. :—

Johnson & Swailes, Bridlington	£1,175 0
C. S. Drury & Sons, Hull	800 0
W. Torr, Hull	775 0
Pickles, Ayland & Co., Ossett	685 0
Kettlewell, Son & Co., Ltd., Hull	540 0
N. S. Long, Blackpool	343 0
E. Dobbs, Hull	175 0
City Engineer's estimate, Hull	580 10

HULL.—For new room for Medical Superintendent, office for Matron, bathroom, &c., for Housekeeper's quarters, and similar block on West corridor of Recreation Hall, and house for Matron, at the Mental Hospital, for the T.C. :—

M. Holmes, Hull	£3,753
A. J. Darnley & Son, Ltd., Hull	3,524
E. Quibell & Son, Ltd., Hull	3,280
‡Hinch Bros., Ltd., Hull	3,040

HULL.—Steel roof principals and other structural work in connection with the erection of the Ringrose-street workshops, for the T.C. :—

Robinson & Kershaw, Manchester	£1,787 0 0
J. Bates & Sons, Leicester	1,548 16 0
T. W. Ward, Ltd., Sheffield	1,440 7 0
Orr, Watt & Co., Ltd., Motherwell	1,417 10 0
S. Russell & Sons, Leicester	1,390 12 6
Wright, Anderson & Co., Ltd., Gateshead	1,378 12 0
A. Dawnay & Sons, Ltd., London	1,304 0 0
Royce, Ltd., Manchester	1,300 0 0
A. & J. Main Co., Ltd., Glasgow	1,280 1 0
J. T. Scotney, Ltd., Hull	1,273 17 6
J. Thorpe & Son, Ltd., Derby	1,265 13 0
Heenan & Froude, Ltd., Manchester	1,251 14 8
King & Co., Ltd., Hull	1,245 0 0
E. C. & J. Keay, Ltd., Birmingham	1,223 17 6
Nisseus, Ltd., London	1,215 5 4
D. T. Brown, Son & Co., Liverpool	1,210 0 0
S. Butler & Co., Leeds	1,207 13 0
Structural Engineering Co., Stratford	1,206 1 6
H. Hill & Co., Hull	1,197 7 3
W. Bain & Co., Coatbridge	1,192 19 9
Ransome Machinery Co. (1920), Ltd., Tipton, Staffs.	1,185 1 3
Lambourne & Co., Ltd., Manchester	1,160 0 0
F. Firth, Batley	1,129 15 0
Building & Engineering Contractors, Ltd., Rotherham	1,123 11 3
R. C. Searle & Co., Ltd., Leicester	1,121 0 6
Octavius, Atkinson & Sons, Harrogate	1,115 3 9
Clyde Structural Iron Co., Ltd., Glasgow	1,109 17 9
Brownlie & Murray, Ltd., Glasgow	1,100 0 0
E. Wood & Co., Ltd., Manchester	1,094 0 0
Barrett & Sons, Ltd., Bradford	1,050 9 0
Walker Bros., Ltd., Walsall	1,013 8 6
Fleming Bros., Glasgow	990 4 9
Lambhill Iron Works, Ltd., Glasgow	978 0 6
‡Monkbridge Construction Co., Ltd., York	930 0 0
City Engineer's estimate	1,258 0 0

HUMBERSTONE.—Enlargement of the Council school, for the Leicestershire E.C. Mr. E. G. Fowler, architect and surveyor :—

Browning Bros., Humberstone	£5,175 12 11
Haskard, MacGregor & Co., Leicester	4,870 0 0
J. E. Johnson & Son, Ltd., Leicester	4,812 0 0
P. Rourke, Lutterworth	4,700 0 0
E. Fox & Co., Leicester	4,662 0 0
W. M. Sharp & Son, Ltd., Leicester	4,657 19 0
W. Potter, Narborough	4,655 0 0
J. Freer, Barrow-on-Soar	4,516 0 0
J. Jelley & Son, Leicester	4,447 15 0
Walter Moss & Son, Coalville	4,446 7 6
Chitham & Co., Ltd., Leicester	4,419 0 0
*J. C. Kellett & Son, Leicester	4,399 0 0

LEAMSIDE.—For (*a*) substructure, and (*b*) superstructure at the new Council school, for the Durham C.C. :—

*(*a*) J. W. White, Sunderland	£4,519
*(*b*) E. R. Davison & Sons, Ltd., Blaydon-on-Tyne	6,284

LEAMSIDE.—Tiler's work at the new Council school, for the Durham C.C. :—

J. Hewitson, Newcastle-on-Tyne £709 14 9

LEEDS.—Twelve semi-detached houses in Talbot-road, Street-lane, Roundhay :—

*T. Morley & Sons.

LEEDS.—New workshops and training centre for the blind in Roundhay-road, for the E.C. Mr. T. Broadbent, architect :—

*J. T. Wright & Sons, Leeds.

LLANHARAN (GLAM.).—Elementary Council school, for the Glamorgan C.C. Mr. D. Pugh Jones, F.R.I.B.A., County Architect, Cardiff :—

*Williams & Davies, Caerphilly £18,962

LONGBENTON.—Convenience at Westmoor, for the U.D.C. Mr. W. Bean, surveyor :—

Geo. H. Phillipson, Newcastle-on-Tyne	£226 0
John Robson, Forest Hall	190 0
Robert Nicholson, Forest Hall	187 16
J. Oliver & Sons, Forest Hall	175 17
*T. E. Ridley, Gosforth	166 10

LONDON.—Alterations to the "Bird in Hand," West End-lane, Kilburn, for Messrs. Truman, Hanbury, Buxton & Co., Ltd. Mr. A. E. Sewell, architect, 91, Brick-lane, E. 1 ; quantities by Mr. Wm. Gilbert, 74, Broad-street-avenue, E.C. 2 :—

Fairhead & Sons	£4,396
Godson & Sons	4,125
Snewin Bros., & Co.	4,098
Dearing & Co.	4,015
Knight & Son	3,972
W. Harper, Ltd.	3,970
Courtney & Fairbairn	3,833
*H. V. Clogg	3,747

(Surveyor' estimate, £3,800.)

LONDON.—Twenty-four houses and forty flats in Glengall-road, for the Poplar B.C. :—

‡R. A. Reader, 28, Christie-road, Hackney £36,226 2 6

LONDON.—Providing a coffer-dam at the head of the draw-dock while the work of constructing the wet dock is being carried out, for the Battersea B.C. :—

‡J. Shelbourne & Co., London £221

LONDON.—Building and foundation work in connection with the installation of a 10,000 k.w. turbo-alternator, for the Hackney B.C. :—

‡J. Jarvis & Sons, Ltd.

LONDON.—Adaptation of 25, Melhurst-street as flats, for the Poplar B.C. :—

R. A. Deader, Hackney £280

MAGHULL.—Retaining wall and fence walls at Dunnings Bridge, on the Liverpool and Ormskirk main road, for the Lancashire C.C. :—

*W. Jowett, Prescot £987 9

MANCHESTER.—Alterations and extensions at Goulden-street Police and Ambulance Station, for the T.C. :—

‡Tinker & Young, Manchester.

‡*Excavator and drainer*—
J. H. Billings & Co., Manchester.

‡*Mason*—
A. Mackay, Oldham.

‡*Plumbers, glaziers, and gasfitters*—
J. Turton & Sons, Manchester.

‡*Plasterers and painters*—
Jones & Jackson, Ltd., Manchester.

‡*Smiths and ironfounders*—
Redpath, Brown & Co., Ltd., Manchester ;
Star Ironworks, Ltd., Oldham.

MIDDLESEX.—Road works along the section between Harrow-road and the L.M. & S.R., Stonebridge-park, for the C.C. :—

T. Higgs	£55,832 0 0
J. Mowlem & Co., Ltd.	52,704 0 0
A. Jackaman & Co., Ltd.	52,690 9 7
Edwards Construction Co.	52,424 0 0
Holloway Bros., Ltd.	49,988 0 0
Peter Lind & Co., Ltd.	49,800 13 10
‡W. & C. French	48,822 3 3

MIDDLESEX.—Construction of the section from Oldfield-lane, Greenford, to Long-lane, Hillingdon, of the Western-avenue, for the Middlesex C.C. :—

G. Whimpey & Co., Ltd.	£246,400 7 8
J. Byron, Ltd.	235,969 1 2
J. Mowlem & Co., Ltd.	233,047 10 7
H. Coxhead	231,960 10 11
Sir Lindsay Parkinson & Sons, Ltd.	224,989 0 0
Walter Jones & Sons, Ltd.	219,528 12 1
J. G. Anderson	215,272 2 8
Roads & Public Works, Ltd.	209,986 2 4
‡Mears Bros.	203,790 4 11

MONAGHAN.—Lighting the Courthouse, for the C.C. :—

*—. Woods, Clones £124

NORTH RIDING.—Six cottages at the hospital, for the Mental Hospital Committee. County Architect :—

*W. Fairweather & Sons, Ltd., York £3,811

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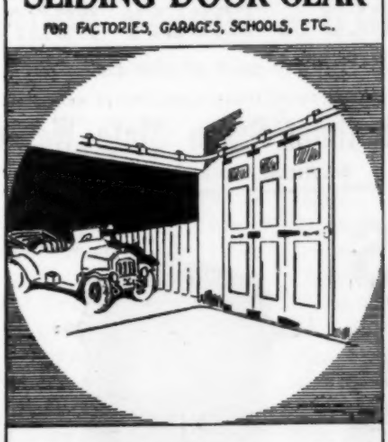

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NEWTON ABBOT.—Eight houses at (*a*) Liverton and eight at (*b*) Hennock, for the R.D.C. Mr. B. H. Palmer, L.R.I.B.A., Architect :—

(A)	
W. Wilcocks, Kingsteignton	£610 0 0
A. Underhill, Moretonhampstead	550 0 0
Davie Bros., Bovey Tracey	537 0 0
M. Nickols, Bovey Tracey	527 10 0
S. Turner, Bovey Tracey	526 0 0
D. Construction Co., Torquay	523 0 0
Heath Bros., Bovey Tracey	502 2 6
(B)	
W. Wilcocks, Kingsteignton	£704 10 0
M. Nickols, Bovey Tracey	620 0 0
S. Turner, Bovey Tracey	598 5 0
Davie Bros., Bovey Tracey	590 0 0
Heath Bros., Bovey Tracey	542 2 6

NORWICH.—Extensions and improvements at the Isolation Hospital, for the T.C. :—

‡W. J. Hannant, Norwich £10,748 6

PENRITH.—New generating house at gasworks, for the U.D.C. :—

*Jos. Varty, Penrith £1,391

PORTSMOUTH.—Rebuilding 228-30, Commercial-road, for Messrs. Porter Bros. Mr. A. E. Tutte, architect :—

Jno. Croad, Portsmouth	£1,500
F. H. Jordan, Ltd., Southsea	1,493
E. Payne, Portsmouth	1,487
E. & A. Springings, Portsmouth	1,469
John Lay & Co., Portsmouth	1,463
F. J. Privett, Southsea	1,282
*Tanner Bros., Southsea	1,200

PWLL.—School, for the Carmarthenshire E.C. Mr. W. Vincent Morgan, A.R.I.B.A., County Architect, County Offices, Carmarthen :—

B. Howell & Son, Llanelly	£17,498
Rees Davies, Carmarthen	16,800
Gathen Joinery Works	14,994
Brown, Thomas & John, Llanelly	14,897
T. Hughes, Bres Saw Mills, Llanelly	14,600
G. Mercer & Sons, Ltd., Llanelly	14,494
*John Evans, Burry Port (Subject to H.M. approval.)	13,250

REIGATE.—Alterations to the Municipal Buildings for the purpose of providing additional storage accommodation, for the T.C. :—

‡W. Knight & Son £381

ROCHDALE.—Transformer house at the Corporation Electricity Works, for the C.B. :—

*R. & T. Howarth, Rochdale.

ROWLEY REGIS.—Sixteen houses at Hill-road, Tividale, for the U.D.C. :—

*C. Coulson, Dudley £8,235

SANDBACH.—Extensions to bakehouse and other alterations at the Central premises, Bold-street, for the Industrial Co-operative Society, Ltd. :—

*P. McLachlan, Warrington.

SEAHAM HARBOUR.—Alterations and extensions to the heating apparatus at the Upper Standard Council school, for the Durham C.C. :—

*J. Laidler & Sons, Durham £346 5

SHEFFIELD.—Wrought-iron fencing at Shire Green Cemetery, for the T.C. :—

‡Wm. Gatrix & Sons, Manchester £1,144

SHEFFIELD.—Stores and conveniences at Neepsend Generating Station, for the T.C. :—

*G. Longden & Son £12,599 10

SHEFFIELD.—Reconstruction of Shirland Bridge, for the T.C. :—

*Wellerman Bros., Ltd. £12,979

SHEFFIELD.—Extension of the Rivelin filter house, for the T.C. :—

‡Abbott & Bannister, Ltd. £7,555

SHEFFIELD.—Sub-station at Botanical-road, for the T.C. :—

*A. Bradbury & Son £1,250 10

SOUTH SHIELDS.—Foundations for boilers, for the T.C. :—

‡Geo. Thornton & Co., South Shields £539 8 6

STAINES.—Manual training and cookery centre and clinic, at the Kingston-road Council School, for the Middlesex C.C. Mr. H. G. Crothall, F.R.I.B.A., County Architect :—

A. Fairhead & Sons, Ltd., Enfield	£5,250
H. Knight & Son, Tottenham	5,196
W. Lawrence & Son, Ltd., London	5,070
J. Dorey & Co., Ltd., Brentford	5,020
A. Monk, Edmonton	4,972
G. Bollom & Sons, Ltd., Acton	4,927
W. H. Gaze & Sons, Ltd., Kingston-on-Thames	4,925
Ferris Bros., Acton	4,899
G. Godson & Sons, Ltd., Kilburn	4,875
‡W. Lacey, Hounslow	4,798

STANLEY.—For (*a*) 44 non-parlour, and (*b*) 16 parlour type houses on the South Stanley housing estate, for the U.D.C. Mr. A. Routledge, surveyor :—

*(*a*) P. Heel, Stanley : £395 and £430 per house.
*(*b*). T. W. Raper, Stanley : £455 per house.

STANLEY.—Extensive office and warehouse premises, for Mr. Geo. Atkinson, of Annfield Plain :—

*P. Hill, Stanley.

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STOKE.—Sub-station at Normacot, for the T.C.:—
*Tompkinson & Bettelley, Longton £888

TURSDALE.—Installation of electric light at the Council school, for the Durham C.C.:—
*F. Reid, Ferens & Co., Sunderland £112 16 6

UPHOLLAND.—War Memorial:—
*Welster & Winstanley, Wigan £680

WELWYN.—332 houses, for the Welwyn Public Utility Society, Ltd., and Moatwood Houses, Ltd. Mr. Louis de Soissons, F.R.I.B.A., and Mr. A. W. Kenyon, F.R.I.B.A., architects:—
*Welwyn Builders, Ltd., Welwyn Garden City £170,000

WELWYN.—New bakery, for Messrs. Welwyn Stores, Ltd. Mr. Louis de Soissons, F.R.I.B.A., and Mr. A. W. Kenyon, F.R.I.B.A., architects:—
*Welwyn Builders, Ltd., Welwyn Garden City £8,085

WESTPORT.—Extension to the steamer shed, for 60 ft., for the Harbour Board:—

T. Ruddy & Sons	£825 0
R. O'Donnell	810 0
*C. O'Malley, Westport	747 10

WHALLEY.—Temporary school-church, on part of the Old Abbey grounds. Mr. H. Greenhalgh, architect, 15, Hawosley-street, Bolton:—
*T. Varley & Son, Whalley.

WILLESDEN.—Repairs, erection of two shelters, covering-in four bridges, &c., at the Park Royal Hospital, Acton-lane, for the B.G. Messrs. A. Saxon Snell & Phillips, F. & A.R.I.B.A., architects, 9, Bentinck-st., W.1.:—

F. R. Hipperson, Broad-street-place	£9,450 0 0
Watts, Willesden Green	9,351 10 0
J. C. Bowyer, Norwood	9,045 0 0
Scott Fenn, Woolwich	8,428 0 0
Troy, Finchley-road	8,128 0 0
General Building Co., St. Martin's-lane	7,950 0 0
Buckingham & Son, Willesden	7,112 16 0
W. A. Coxon, Willesden	6,475 0 0
Prestige & Co., Grosvenor-road	5,973 0 0
W. Chappell, Maida Vale	5,594 15 3
*M. Greenwood & Sons, Harlesden	5,371 0 0

WINDERMERE.—Cinema in Lake-road, for the directors. Messrs. Walker, Carter & Walker, architects. Quantities by the architects:—
*Pattinsons, Ltd., Windermere £7,865

YORK.—190 houses on the Tang Hall estate, for the T.C.:—
‡Sabin & Young, Scunthorpe £89,385

YORK.—216 houses on the Tang Hall estate, for the T.C.:—
‡F. Shepherd & Son, Ltd. £102,591

YORK.—Alteration to Corporation premises in Parliament-street, for the T.C.:—
*J. Hodsman & Sons £1,287

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